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FEBRUARY, 1880.

MAN may be happy without a garden; he may have a home without a tree, or shrub, or flower; yet, when the Creator prepared a home for man, made in his own image, He planted a garden, and in this placed the noblest specimen of creative power, to dress and to keep it, and there he remained during his life of innocence and happiness. And, in all parts of the civilized world, the refinement, and innocence, and happiness of the people may be measured by the flowers they cultivate. The love and care of flowers is one of the few pleasures that improve alike the head and the heart. It is a pleasure that brings no pain, a sweet without a snare.

Wonderful changes have taken place in our country within the memory of some who do not think themselves very old, and who have but recently stopped pulling out the grey hairs, as a hopeless task. The huge chimney, made of rough stones, with its log cabin attachment, the well-sweep, the rail-fence and bars, the wood-pile, with its mound of chips and rusty old axe, useful for the boys when out of school, have all disappeared. The pigs no longer seek admittance at the front door, nor demand a first chance at the dinner—having snuffed its fragrance from afar—in language more expressive than elegant; even the music of the spinning wheel is hushed.

We have nothing to say against log cabins. They were proper for a new and wooded country, and quite picturesque—a necessity and

a blessing. Many noble men have commenced life in log cabins, but we observe that they did not stay in them longer than necessary. But the log cabin is gone, never to return. It long ago gave way to the square box, painted red, or, if unusually pretentious, pure white, adorned with blinds of the most intense green. The yard was cleared of chips and surrounded with a board fence, a straight walk leading from the street to the front door, while a few beds, bordered with shells or stones, contained Poppies and Bachelor's Buttons, and Grass Pinks, and Sweet Williams. A few Hollyhocks and Lilacs added both beauty and fragrance to the little home garden. A border in the background contained Thyme, and Sage, and Summer Savory, and similar treasures for the good woman's culinary uses, while a patch of Tansy and Peppermint were quite as necessary for the good man's bitters.

But change and progress is the order of the world, especially of the American world, and the old house that the carpenter made in the similitude of a dry goods box became worn out, or too small, or too very unfashionable, and the architect designed, and the builder erected a new house, with towers and gables, and curious porches, and strange windows, that one might almost think an emanation from fairy land. The old flowers are discarded with the beds and borders of whitewashed stones, and even the fence has been removed to the pasture

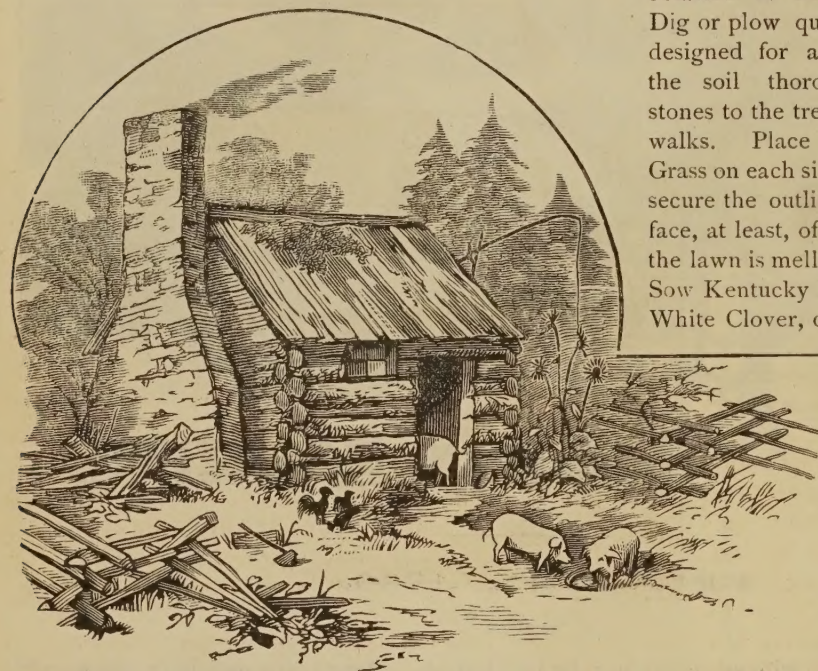
lot. The front yard has become a lawn, and the Tansy and Peppermint beds have been transformed into a parterre. Instead of flowers a few weeks in the year, as in the olden time,

age, and then determine on the walks, making no more than actually necessary. Stake out the lines, and remove the earth twelve or eighteen inches in depth, using the earth thus

obtained to fill up any depressions.

Dig or plow quite deeply the ground designed for a lawn, and pulverize the soil thoroughly, removing all stones to the trenches prepared for the walks. Place a narrow margin of Grass on each side of the walk, so as to secure the outline; see that the surface, at least, of the soil intended for the lawn is mellow, and will not bake. Sow Kentucky Blue Grass and a little White Clover, or the prepared Lawn

Grass of the seedsmen, at the rate of four bushels to the acre. After the walks are filled with rough stones to within four or five inches of the surface, cover with fine gravel until the center is level with the surface of the lawn. This work is



there are now unbroken beds of beauty from early spring until the frost-king lays his cold hand upon every leaf and flower.

The change has done much to make people better, healthier and happier; but its speediest and happiest effects are with the women and children, while the men are enjoying in many cases the blessings they do not appreciate, and sometimes do not deserve. A few there are who try to show their manhood by a contempt of beauty. They are, however, remnants of a race almost extinct, and we say, peace to their ashes. Men of intellect and refinement are helpers in the good work, and nobly aid the

best done very early in the spring, so as to give the Grass seed the benefit of the spring rains, or it may be done in September. If the soil is very stiff, it is well, after sowing the seed, to cover the surface with an inch of fine manure, and this should remain, after raking off a little of the coarsest, during the summer, if it seems necessary. This plan is almost essential to success in the south and California, and other warm and dry sections. If the work is well-done, by the last of June the lawn will look well and require cutting. Weeds naturally appear, but as they are mostly annuals, if the Grass is kept short they cannot seed and will soon disappear. A few perennials, like Dock and Plantain, should be removed by hand.

Having obtained a good lawn, the usual practice is to spoil it as soon as possible, by making unnecessary walks and flower beds, and by excessive planting of trees and shrubs. Grass cannot grow in dense shade, and no lawn can look well cut up by narrow walks. A good portion of the lawn, if possible, should present an unbroken surface, only an occasional and handsome tree being admitted, and at such distances apart that they can grow and become perfect in form; and let no desecrating hand mar the work of the Creator by the saw, nor touch an ornamental tree with a pruning knife. This should only be allowed under such circumstances as would justify the amputation of the limb of a friend. The shrubs should be in clumps, or groups, and so thickly planted as to



weaker ones in making homes of beauty. A few suggestions as to how this can best be done will be in place.

The foundation of modern gardening is good walks and a good lawn, and as both will last as long as the maker, it is well that the work should be well-done. First secure good drain-

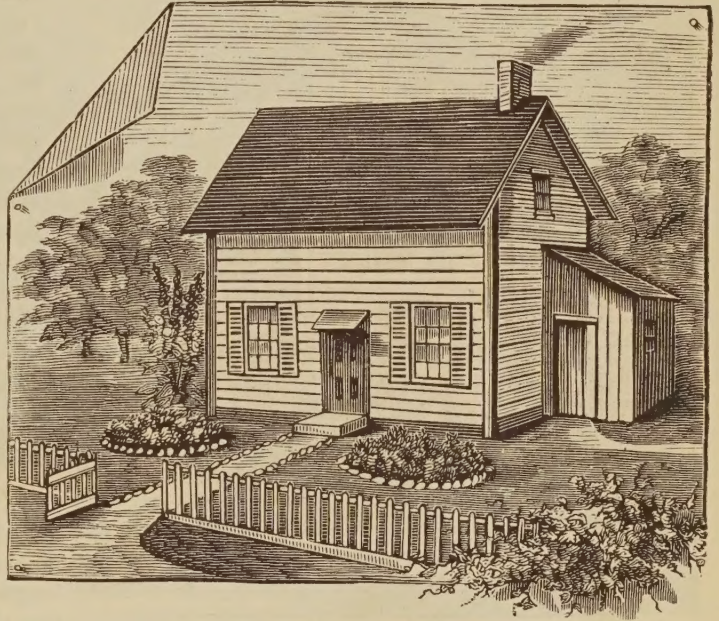
cover all the ground, and the soil under them kept cultivated, and clean, like a flower bed. A few flower beds may be made, and usually near the borders, or opposite windows, and they should be of simple, graceful forms, and look well the whole summer, and every day and all day. There are many beautiful flowers that bloom only for a few days, or weeks, and however desirable they may be in certain places, are unfit for beds on the lawn. Others are in flower a long time, but the flowers are not sufficiently abundant, or are hidden by the foliage. Some kinds, though they flower freely, cannot endure the full blaze of the summer sun, and are, therefore, unfit for this work. Of all flowering plants, the Scarlet Geraniums have been the most popular for bedding, and the most freely used in all parts of the civilized world for making lawn beds, so much so that the opponents of the system have denounced it in ridicule as the "scarlet fever."

Through the skill and enterprise of florists, we now have many varieties of plants with bright and beautiful foliage. Among these are the Variegated-leaved Geraniums, Achryanthes, Coleus, Centaureas, and Golden Pyrethrum. The Achryanthes is a darkish purple, or maroon; the Coleus gives a very wide range of color; Centaurea is snowy white, and Golden Pyrethrum, yellow. It will be readily seen that with such material most charming beds of color can be formed. These beds and borders are often formed of rows of plants or flowers of different colors, and are then called ribbon-beds, and, when the patterns are more intricate, carpet beds, and they are often gorgeous.

Another style of lawn bed, and perhaps the most magnificent of all, is composed of large, sub-tropical plants. They give us a taste of the luxuriance of tropical foliage, and, on lawns where there is sufficient room, nothing will afford more pleasure. These beds are usually planted with Ricinus for the center, then Cannas, followed by *Caladium esculentum*. A low, outside border may be composed of Centaureas or Coleus. The Ricinus is obtained from seed, and will grow about as freely as Corn, and require about the same soil and warmth. For earliness it is sometimes started in pots. The dry blubs of Cannas and Caladiums are obtained from florists, and young plants of

Coleus or Centaureas are to be had quite cheaply in the spring.

The plants desirable for bedding are not expensive, and good flower beds and ribbon

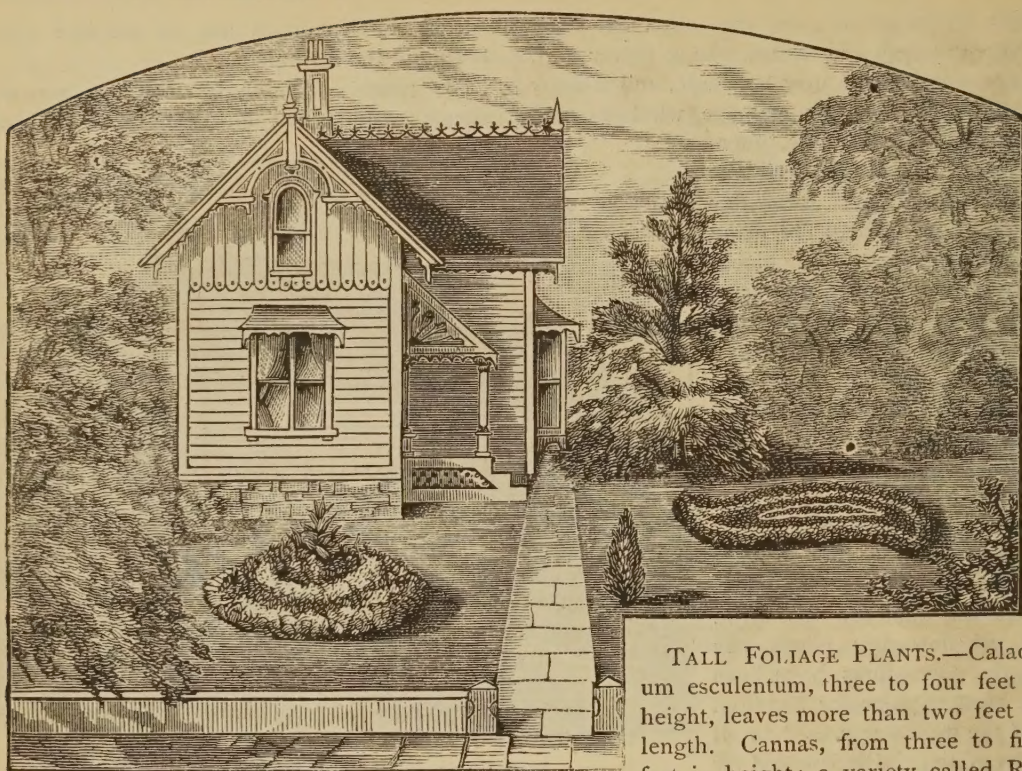


beds can be made of annuals at the cost of a few cents, and for this not many equal the *Phlox Drummondii*. A few rows of white, purple, and scarlet will form a ribbon bed of great beauty, and the product of a paper of Petunia seed will make no mean show, if properly cared for.

These beds, it must be remembered, are for the adornment of the grounds alone, and they furnish no flowers for the house—no presents for friends, no bouquet for the dining-room, or for schools, or churches, or the sick-room. These we must have. So, just back of the lawn, make generous beds of flowers that you can cut freely—Asters, Balsams, Zinnias, Stocks, Mignonette, Sweet Peas, &c.



The great difficulty with American gardens is that they are too large, and not sufficiently cared for. If we gave the same amount of labor on a quarter of an acre that we now ex-



pend on an acre, the result would be much more satisfactory. No one should have more ground in garden than he can keep in the very highest state of cultivation. It is this kind of excellence that affords pleasure, while failure or partial success is a source of pain. It is not only a fault to cultivate too much ground, but even too many flowers. Some seem anxious to obtain and grow everything. This is not well, especially where there is not a good deal of time and money to be devoted to the work. A choice selection is best, and we like every cultivator of flowers to have a pet or hobby. Always have something choice—something grown better than any one else is growing it—something you have reason to be proud of. It will astonish you to see how flowers thrive under such petting, and what a wonderful exhibition they make of their gratitude.

We name a few plants suitable for special garden work. These lists embrace but a few of the many adapted for the several purposes indicated.

DWARF PLANTS FOR EDGINGS OR BORDERS OF BEDS.—*Alternanthera*, *Armeria* or *Thrift*, and *Pyrethrum aureum*.

WHITE-LEAVED PLANTS.—*Glaucium*, *Centaurea*, and *Cineraria maritima*.

SHOWY-COLORED FOLIAGE.—*Achyranthes*, *Coleus*, and *Bronze and Silver-leaf Geraniums*.

SCARLET GERANIUMS.—*Gen. Grant*, *Queen of the West*, and *Excelsior*.

TALL FOIAGE PLANTS.—*Caladium esculentum*, three to four feet in height, leaves more than two feet in length. *Cannas*, from three to five feet in height; a variety called *Robusta*, from five to eight feet. *Ricinus*, *Castor-oil Bean*, from six to twelve feet.

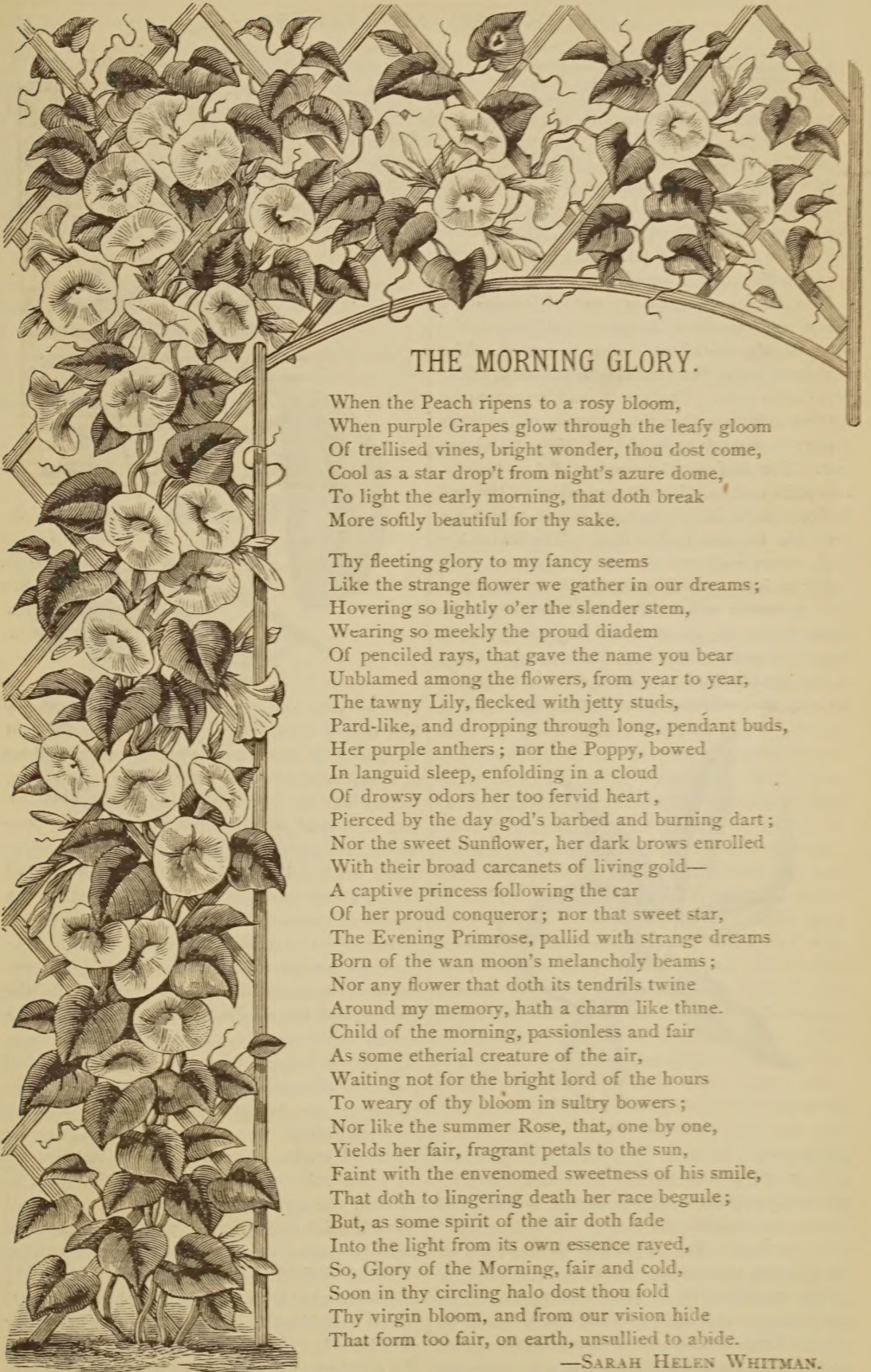
ANNUAL FLOWERS FOR BRILLIANT SHOW.—These are, doubtless, familiar to most of our readers. The *Aster*, *Antirrhinum*, *Balsam*, *Dianthus*, *Delphinium*, *Pansy*, *Petunia*, *Phlox Drummondii*, *Portulaca*, *Salpiglossis*, *Stock*, *Verbena*, *Double Zinnia*, and other varieties that we have not space to name, should be in every collection.

FLOWERS DESIRABLE FOR FRAGRANCE.—For fragrance nothing equals the *Mignonette*, *Sweet Alyssum*, *Sweet Pea*, *Erysimum*, *Stocks*, *Pinks*, *Picotees*, and *Carnations*.

RIBBON BEDS.—A very pretty ribbon bed is made by taking different colors of the same flower, like *Phlox*, *Portulaca*, *Stocks*, or *Asters*.



In conclusion, we say to all, cultivate flowers. These children of the field speak to us in every fragrant breath and lovely tint, and graceful form, of Him who spoke from naught such matchless beauty.



THE MORNING GLORY.

When the Peach ripens to a rosy bloom,
When purple Grapes glow through the leafy gloom
Of trellised vines, bright wonder, thou dost come,
Cool as a star drop't from night's azure dome,
To light the early morning, that doth break
More softly beautiful for thy sake.

Thy fleeting glory to my fancy seems
Like the strange flower we gather in our dreams;
Hovering so lightly o'er the slender stem,
Wearing so meekly the proud diadem
Of penciled rays, that gave the name you bear
Unblamed among the flowers, from year to year,
The tawny Lily, flecked with jetty studs,
Pard-like, and dropping through long, pendant buds,
Her purple anthers; nor the Poppy, bowed
In languid sleep, enfolding in a cloud
Of drowsy odors her too fervid heart,
Pierced by the day god's barbed and burning dart;
Nor the sweet Sunflower, her dark brows enrolled
With their broad carcanets of living gold—
A captive princess following the car
Of her proud conqueror; nor that sweet star,
The Evening Primrose, pallid with strange dreams
Born of the wan moon's melancholy beams;
Nor any flower that doth its tendrils twine
Around my memory, hath a charm like thine.
Child of the morning, passionless and fair
As some ethereal creature of the air,
Waiting not for the bright lord of the hours
To weary of thy bloom in sultry bowers;
Nor like the summer Rose, that, one by one,
Yields her fair, fragrant petals to the sun,
Faint with the envenomed sweetness of his smile,
That doth to lingering death her race beguile;
But, as some spirit of the air doth fade
Into the light from its own essence rayed,
So, Glory of the Morning, fair and cold,
Soon in thy circling halo dost thou fold
Thy virgin bloom, and from our vision hide
That form too fair, on earth, unsullied to abide.

—SARAH HELEN WHITMAN.

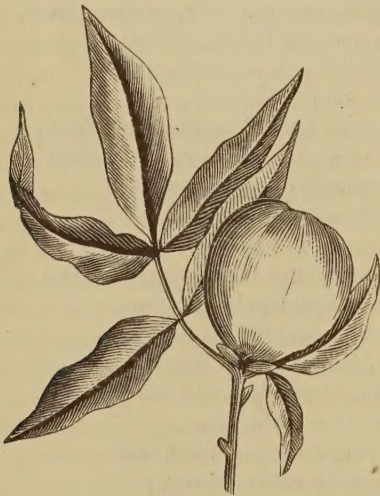
NUTS AND NUT TREES.

And loud the black-eyed Indian maidens laugh,
That gather from the rustling heaps of leaves
The Hickory's white nuts, and the dark fruit
That fall from the gray Butternut's long boughs.

—BRYANT.

An abundance of nut trees in the forests and by the banks of the streams, in all parts of this country, supplied the aborigines with a dainty and nutritious article of food, and, although the forests are now mainly felled, the supply is still large for the present population.

The Hickory nut, on account of its delicate flavor and excellent keeping qualities, is the most highly prized of our native nuts. The best kind is the Shag-bark, or Shell-bark, Hickory, *Carya alba*. The tree is readily recognized by the old bark hanging loosely all over its trunk; it attains a height of sixty to eighty feet. The leaf usually consists of five leaflets, two pairs and an odd, or terminal one; the end leaflet is much larger than the others, which are from six to nine inches long. The leaves are dark green and smooth and shining, on their upper surface; when bruised, they emit a peculiar, aromatic odor. The fruit is globose in form, borne on the ends of the young wood, singly, or two or three in a cluster, and consists of an outside husk, or hull, almost woody in texture, and which, when ripe, opens by four



HICKORY NUT.

equal parts or valves. By reference to the illustrations of the Walnuts and Butternut, it will be perceived that their outer covering, or husk, has no regular opening, but, drying, it cracks irregularly by contraction, allowing, in the case of the English Walnut, the nut to fall out, but that of the Butternut and Black Walnut adheres until forcibly removed, or until it falls away by decay. This difference in regard to the outer covering or husks of the nuts is a conspicuous

and distinguishing feature of the two genera, *Carya* and *Juglans*. The Hickory nut is roundish in form, but compressed sideways, and more or less four-angled. The shell, which is white and of a bony hardness, is thin in comparison with the nuts of some other species of Hickory, but requires a sharp stroke of a hammer to crack it. When well cracked the nut



PECAN NUT.

divides into two equal parts, each exposing a half of the seed. Squirrels are very fond of Hickory nuts, and store away great quantities of them 'in the fall for their winter's provision. In this way the nuts are more or less scattered, and conveyed in all directions from the spot where they grew. A favorite hiding-place is in stone walls, and it is quite common to find Hickory trees growing here and there along the course of these walls, where a nut has fallen, germinated and made a successful growth. As the trees are all raised from seed, there is considerable variation in the size of the nuts, the thickness of the shells, and the quality of the meats. Occasionally, a tree will be found bearing nuts of large size, with thin shells and of great excellence. The question is how to propagate the variety; grafting and budding are both difficult with this tree, but they may be practiced on it. Possibly an active demand for a particular variety would have the effect to awaken the dormant genius of some practical horticulturist and discover to him a method of rapid propagation. This tree has the reputation of being difficult to transplant, and no doubt this is the case with seedling trees that have attained considerable size on the spot where they germinated. If transplanted when young, in the usual manner of nursery trees, and the tap-

root shortened, it is quite probable that they could be afterwards removed with comparative safety. The best way of propagating by seed is to sow the nuts where the trees are to stand. This can be done by taking the nuts as soon as gathered, and placing them in moist sand, and keeping them in this way, in a cellar or other cool place, until early spring, when they should be planted where they are to stand, three or four in a hill; when the plants show themselves, all but one can be removed.

The wood of the Hickory is extremely valuable for many purposes. It is very hard, strong, elastic and heavy. The tree, when raised singly, is well furnished with branches, though not symmetrically, and is very ornamental, although, in the forest, it almost invariably has a long naked stem, and branches only near its summit.



ENGLISH WALNUT.

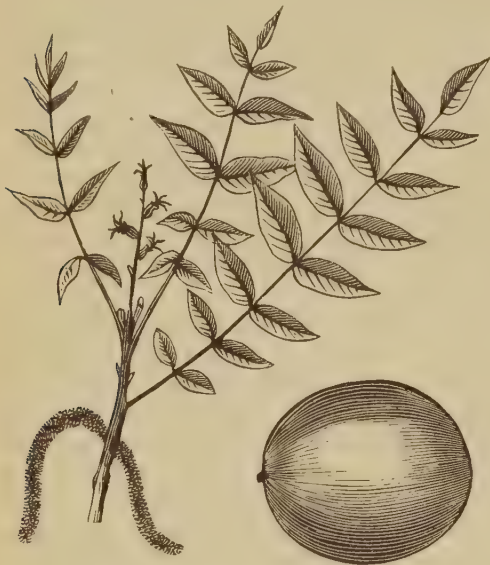
The Shag-bark Hickory is found common in all of the eastern States, and those of the Atlantic coast as far south as northern Georgia; westward, it extends along the coast of Lake Erie, but is not common elsewhere west of the Alleghanies. At the west, however, there is a large Hickory nut, with a thick shell and with a meat inferior to the Shag-bark nut. This species, *Carya sulcata*, is commonly known as the Thick Shell-bark.

The only other species of this genus worthy of notice, as an edible nut, is the favorite Pecan nut, *Carya olivæformis*, growing plentifully in the valley of the Mississippi, from Illinois southward to Texas. It does not grow wild in the Atlantic States. The nut is enclosed in a husk and is from an inch to an inch and a half long, cylindric and pointed at the ends, and of

the general form of the fruit of the Olive, whence its specific name. The seed is sweet, of a delicate flavor, and, by many, considered superior to the Hickory nut; but as this is a matter of taste, there is a difference of opinion in reference to it. The Pecan tree grows from sixty to ninety feet high, straight and well shaped. It has to acquire considerable age before fruiting, or not until thirty or forty years old. This circumstance alone forbids its profitable cultivation. Immense quantities of Pecan nuts are gathered in Texas, far beyond the needs of the inhabitants, and hundreds of thousands of bushels are annually sent north to all parts of the country, and to Europe. In the latter country, they have been largely used in the manufacture of oil, in the manner that the English Walnut is so used.

The English Walnut is largely raised in many parts of Europe. It is not, as one would infer from its name, a native of Great Britain, but is originally from Persia, and was introduced into England in 1562. The tree grows to a height of forty to fifty feet, and, when young, is of very handsome appearance. Its leaves usually consist of two pairs of leaflets and an odd one, the odd one being much the larger. The leaves, when bruised, emit a very strong but agreeable odor. Almost every one can attest to the excellence of the nuts, as they are largely imported into this country, and are to be found in every fruiterer's shop. That this tree is very well adapted to cultivation in many parts of this country is, as yet, but little known. Such, however is the fact, and in time there will probably be a large produce of the nut here. It appears to be about as hardy as the Peach, and to succeed where that fruit can be successfully raised. On the subject of its hardiness, however, for various localities, we are quite in the dark, and probably it will be eventually found that it is not suited to some places where we should naturally expect it to do well; for instance, on the grounds of the Kansas Agricultural College, at Manhattan, it is reported to be a failure; but all kinds of *Arbor vitæ* are reported failures on the same grounds, although more than a hundred acres of Peach orchard are bearing fruit in that county. Some parts of California are admirably adapted to this nut, and it is there being cultivated with much success and profit. There are a number of trees in different parts of this city that have, for years, each borne bushels of nuts; and occasionally we hear of a tree, here and there, in different parts of this and the adjoining counties. A tree two or three years old, transplanted from the nursery grounds, will bear in five to eight years and, our English authorities state, they continue in bearing for a

period of twenty years. A dry limestone soil is best suited to it, and on light lands it commences soonest to bear. When cultivated in plantations or groves, the trees should stand about forty feet apart, and receive such attention in the way of tilling and cropping the ground as would be proper for an Apple orchard. The



BLACK WALNUT.

trees require no pruning, nor any special attention, and when too old for fruiting profitably, their timber is very valuable, and is prized especially for gunstocks, as it is strong, light, and susceptible of a high polish. In some parts of Europe where Walnuts are raised in large quantities, they are used for making oil, as we have noticed in the case of the Pecan nut, which is used when it can be had to advantage. On an average a bushel of nuts yield seven or eight pounds of oil. Green Walnuts, before the shell hardens, are highly prized for pickling.

The usual mode of propagation is by planting the nuts. For this purpose the best nuts should be selected, and, without allowing them to become dry, should be placed in layers of moist sand and kept in a cool place until early in spring; then they should be sown, or planted, so as to be covered about two inches in depth. If the nuts are planted where the trees are to stand, it is said, the best and tallest trees are obtained, but if first raised in nursery rows and transplanted, they will come sooner into bearing. We would advise our readers in all favorable localities to try one or two of these trees. If successful, they will always be pleased with the result, and, if a failure, the loss will be slight.

The scientific or Latin name, *Juglans*, is a compound of *Jovis*, and *glans*, a nut; that is, the nut of Jupiter. It received this name from the ancients, who thus expressed their high ap-

preciation of its valuable qualities. The genus, *Juglans*, includes our Black Walnut and the Butternut. The Black Walnut, *Juglans nigra*, is one of the most valuable of our native trees. It is a rapid grower, and attains a height of sixty to ninety feet. The largest Black Walnut tree in the country is said to be growing at Roslyn, Long Island, on the estate of the late lamented poet, W. C. BRYANT. It grew from seed in the year 1713. It is twenty-five feet around it, three feet from the ground. At the height of about fifteen feet, the trunk divides into several large branches, and spreads out into a large head, covering a space of a hundred and fifty feet in diameter. Usually, in the forest, or where these trees grow together in groups, the trunk is a single column to the height of thirty to fifty feet, without branches. Although the Black Walnut is found to a limited extent in almost every section of the country, it is only in the valley of the Mississippi and its tributaries that it becomes a prominent feature of forest scenery. From Ohio, westward to Colorado, it is one of the most important trees; or, at least, such was its rank before the native forests were leveled. At present, it is comparatively scarce in the States east of the Mississippi, and, at the rate it is now disappearing, another quarter of a century at most will exhaust the supply for mechanical purposes. In view of the great value of this tree for its timber, the beauty and elegance of which for cabinet and other fine



BUTTERNUT.

work is so well known, and understanding the absolute certainty of its high price in the market of the next generation, it will be an act of only ordinary prudence, for those properly situated to do so, to plant it. As a nut, the fruit of the Black Walnut is of little value, although its peculiar flavor is enjoyed by some.

The Butternut, *Juglans cinerea*, is very commonly scattered over the northern States and Territories of this country, and extending to the Rocky Mountains. It grows from fifty to sixty feet high, and, when standing alone, has a wide-branching head. The nut is very rich and of excellent flavor.



NOTES FROM MY DIARY.

MR. JAMES VICK:—As you have invited me to come again, I thought I would send you a few notes from my diary for October and November—remarkable months everywhere, so far as I have heard, for things in season and out of season. Strawberries and Raspberries have borne a second crop; Apple trees bloomed; Trailing Arbutus and Violets thought spring had come again, and Nature seems to be out-doing herself. We have had weather belonging to the torrid, temperate and frigid zones all mixed up, until one is obliged to keep winter and summer clothing on hand, to be changed at short notice.

September 30th and October 1st, the Essex County Agricultural Society joined with ours, the Houghton Horticultural Society, in holding a fair in our city, filled the largest hall we have to overflowing with fruit, flowers, vegetables, and the inevitable quilts and rugs that accompany an agricultural fair. The show of fruit was as large and fine as they had at the Massachusetts Horticultural Fair in Boston. The plants and cut flowers were rather crowded, and the vegetables overflowed into a tent near by; but altogether it was a grand success. The weather did its best (it generally rains one day), the thermometer nearly reaching 90° the first day, and 92° the second day. The society will meet here again next year.

The 15th day of October, I saw a Rosebush covered with Roses; the variety we used to call Cinnamon Rose; blooms early in June, pink, with petals much crimped.

October 24th, I saw in a garden, a standard Rosebush, with six perfect White Roses, and as many buds. I noticed that Heliotropes, Fuchsias, Salvias, Carnations, Monthly Roses, and Pansies were as bright as they had been all summer. The same day I saw a beautiful Clematis in bloom. This was a memorable day, also, on account of having our last picking of Lima Beans for dinner. The night of the 24th we had a very sudden change, and our first frost. Dahlias turned black, Squashes and

Tomato vines succumbed, and the watering-pot, filled with water, left on the piazza, froze half an inch deep. After this we had a respectable snow storm, enough for sleighs for a few hours, then it disappeared, and to-day, December 12th, the ground is as open as it was last September.

November 5th.—While at breakfast this morning (after election of Governor), a Robin Red-breast flew on the Grape Vine beside the dining-room window, sang "Cheer up, cheer up," and then flew away. We thought it must be that he had heard the news that Butler was not elected Governor, as we did not want him; and sure enough the morning papers confirmed the Robin. You know the Bible speaks of a bird carrying the news. We had not seen a Robin for two months.

November 12th, I went to the Chrysanthemum Show, in Boston, at the rooms of the Massachusetts Horticultural Society. It was very fine. The plants were in pots and formed large bushes, covered with blossoms the size of Roses. The largest contributors were Mr. H. L. HIGGINSON, of Canton, Mass., and Mr. JOHN L. GARDNER, of Brookline. Both took prizes. A very curious plant was a Japanese variety, called Golden Dragon, bright yellow petals, much twisted; another, *Purpureum Alba*, rosy-purple, spotted with white. The two plants that seemed in my eyes to be nearest perfection were Fair Maid of Guernsey, snowy white, and Christine, blush pink. There was a fine variety of Pompones, of all shades of yellow, crimson, and white. Mr. JAMES CARTWRIGHT, of Wellesley, had some handsome Cyclamens; also, some lovely Orchids. There was a small collection of cut Roses, and other flowers. Among the floral designs, a white wire basket, filled with choice flowers, exhibited by Mrs. E. M. GILL, was the handsomest I ever saw anywhere. There was quite a display of Apples and late Pears. It was not the largest exhibition I have seen, but it certainly was the best arranged. The weather was so warm that men were working out of doors in their shirt-sleeves, and that

night we had a thunder shower and some sharp lightning.

November 20th.—I supposed all the mosquitoes perished in the snow storm we had, but last evening, while writing, one bit me on my hand, which so astonished me, I perpetrated the following on the spot:

'Tis the last gray mosquito left buzzing alone;
All its tuneful companions are frozen and gone;
No friend left to cheer him, and no winter clothes—
Fly! silly mosquito, before you are froze.

I imagine this sounds like the "impromptu verses" of Silas Wegg, in Dickens's "Mutual Friend," when he "chopped into poetry," so I won't inflict any more at present.

December 12th.—My husband has just come in and says he met a gentleman with a Dandelion blossom in his hand, he had just picked in a field near Lynn. Can New York beat that? —MRS. M. P., JR., Lynn, Mass.

HARDY ANEMONES.

It is a matter of surprise that so few amateurs take an interest in the beautiful family of Anemones. Even the professional florists have not given them the attention they deserve, owing, no doubt, to the fact that they are so little known. That they have many good points in their favor, and a great diversity of form and habit, cannot be denied. When so little notice is taken of so fine a genus as this, it is evident that neither their many excellent qualities are appreciated, nor their easy cultivation understood. I say easy cultivation, for, without exception, they are hardy, which is a very import-



ANEMONE APENNINA.

ant point in favor of any plant. They are not easily checked in growth; therefore, they are not difficult to transplant, while for showy flowers they are very desirable. There are over sixty true species, and the varieties run into hundreds. The best are the following:

Anemone alpina, a grand species, growing about 12 inches high, with large white flowers,

suffused on the outside with a pale bluish tint. It flowers in late spring.

A. alpina sulphurea is a very fine, sulphur-colored variety of the same kind, but is scarce.



ANEMONE HEPATICA.

A. Apennina is an old favorite, growing about 9 inches high, with large, brilliant blue flowers, which appear early in spring.

A. fulgens.—This variety is remarkable for its startling brilliancy; grows about 12 inches high, and bears large vermillion-colored flowers, finely centered with black stamens. *A. fulgens cœrulea* is a new blue variety of the preceding. Both of them flower early, and remain in bloom for weeks.

A. Hepatica.—The common Hepatica of our woods has a variety of colors and shades, all of which are handsome, but not to be compared



ANEMONE JAPONICA.

with the double forms, which may be had in red, white, and blue colors, though the blue is rather scarce. The best blue Hepatica is one from Transylvania, known as *Hepatica angulosa*, growing about 12 inches high, with bright flowers as large as silver half dollars. The Hepaticas flower early in spring, and grow best in soil that contains a quantity of mold.

A. Japonica.—A stately plant, growing from 2 to 4 feet high, with flowers as large as a silver dollar. In the typical species the flowers are of a peculiar red color. The variety, *alba*, has pure white, and *hybrida*, bright pink flowers. These varieties are very beautiful, and almost

indispensable, as they bloom from September till snow.

A. Narcissiflora.—Very different from any other species. The flowers are borne in a sort of umbel, on stems about 12 inches high, are pure white, and appear in late spring.

A. nemorosa alba, fl. pl.—This species grows about 8 inches high, with very double flowers of a pure white color. *A. nemorosa rosea fl. pl.* is the same in all respects, except color, this



ANEMONE NARCISSIFLORA.

being of a bright rosy red. It is very beautiful, especially when grown with the white variety. A new single variety of a bright blue color has made its appearance in England, and is known as *A. nemorosa Robinsoniana*. I have not seen it, but it is said to be very fine. The Anemones of this section flower very early, and are best when planted in soil from the woods, in a half-shaded locality, with Hepaticas.

A. palmata.—A rare and very beautiful kind, in two colors. The typical species is of a glittering golden yellow, while its variety, *A. p. alba*, is pure white; both grow about 9 inches



ANEMONE NEMOROSA.

high, and flower in late spring. This species must have a moist sandy loam in order to do well.

A. pulsatilla.—Very graceful, with handsome purplish flowers on stems 10 inches high. Without doubt, this flower was made to meet the requirements of a highly refined taste. It flowers in early spring.

A. Ranunculoides.—A golden-yellow flower, growing about 8 inches high, flowering early, and should be grown with *A. Hepatica* and *A. nemorosa*.



ANEMONE PULSATILLA.

A. stellata.—A handsome kind, with star-shaped flowers in shades of red, rose, and white. It grows about 10 inches high, and flowers in late spring. This species is said to be not hardy so far north as this, but planted in warm sandy soil, it has done well, and I should judge that it would prove hardy in any soil that is above surface water.



ANEMONE CORONARIA FLOWERS.

The foregoing list includes the very best of the many species, and all of them will flourish in common garden soil, except as noted. All of them increase readily by division of the root, and, for the spring-blooming kinds, this operation is best done in the early part of July. The roots of the autumn-blooming kinds should be divided in early spring, and, in fact, any of the kinds, if they have come from a distance, do best when planted in the spring.

I have thus far said nothing about the *A. coronaria*, as it is not considered hardy, but I will close this article by relating my experience with it. Some years ago, not being able to determine why this species should be tender, and all the others hardy, I planted a lot of tubers for trial. About the 20th of October they were planted in sandy soil, enriched with leaf mold, and covered to the depth of 4 inches, after which

I left them to the mercy of our northern winter. As my garden is protected by trees on the north and west, the snow drifts over it moderately. When the snow went off, I found that they were just coming through the ground. They stood the heavy freezing through March, and flowered well. After the foliage ripened I took them up, but missed some of them, and in spading up the bed I scattered them all over it, not knowing they were there. After the autumnal rains they came up, and I let them alone; yet all that I had not broken too much in spading the bed, flowered the next spring.

Two years ago, I prepared a bed by adding in quantity to the sandy soil, equal parts of fine gravel and leaf mold. I then planted it with five of the best double varieties that I could get from Holland, and the result has been more



ANEMONE CORONARIA PLANT.

than satisfactory; some of them blooming in the autumn as well as in the spring. Some of the foliage has been winter-killed, but not enough to injure the tubers. I have a box that is about 14 inches deep, without top or bottom, which I keep around the bed, and this serves not only to catch the snow, but, what I consider of more importance, wards off the frosty winds. Every winter I give them a slight sprinkling of common salt, and they like it. I do not take up the tubers every year, but, when the clumps get too large, I break them up and start again. Those who have never tried these Anemones, will be surprised at the brilliancy of their colors, and at the wonderful combination of colors in the variegated forms.—E. H., *LeRoy, N. Y.*

THE LOPHOSPERMUM.

MR. JAMES VICK:—Among the many elegant climbing plants that are well adapted for general cultivation, the *Lophospermum* is well worthy of a position in the first class. I do not recollect that any of the readers of the MAGAZINE have had a word to say for it, and yet I think if they only knew what a beautiful, free-flowering climbing plant it is, they would have called attention to it before this. Why it has been so much neglected I cannot tell, but as I do not see the name mentioned in many catalogues, no doubt some of your readers will imagine that it is a new plant. Such, however, is not the case. It is a native of Mexico, from which country it was introduced in 1835, and

it should be more generally known and cultivated than it is. It is of rapid growth, and is an exceedingly beautiful evergreen greenhouse climber, with handsome foxglove-shaped flowers, which are produced in the greatest abundance during the summer months; and, if the plants are placed in a warm and light position, and not allowed to become pot bound, they will flower during the winter months. It is, also, a most desirable plant for hanging baskets. Although described in some catalogues as a greenhouse climber, yet, for the purpose of training to a trellis outside during the summer months, it is, when properly grown, unequaled. It is a plant easily cultivated, but prefers a light, rich soil, and, if all is favorable, will bloom in about five months from seed. Young plants can be cheaply obtained from most florists. They can also be raised from seed by any person, providing they observe the following directions. Sow the seed in a well-drained pan of light soil, about the end of March, or beginning of April, and cover lightly with fine, sandy soil. Place the pan in a hot-bed, or any warm, light place, and, as soon as the plants can be handled, pot them off into three-inch pots; place the plants in a warm, light place, and, when the plants have taken hold of the soil, pinch off the tops; this will cause them to branch. If the tops are pinched off several times, so much the better. Plant out as soon as all danger of frost is over. The seed can also be sown in a cold-frame after April 15th, or in a nicely prepared border in May; but the plants will not flower so early. This late sowing will, however, produce the best plants for winter use. When planted out where they are to blossom, the ground should be dug to the depth of two feet, and a good portion of well-rotted manure thoroughly mixed with the soil. The plants can be taken up, cut back, and potted in September, and, as the roots are thick and fleshy, this can easily be done without much injury to the plants. When potted, place in a shady place for a few days, taking care that they are not suffering for want of water; they can be removed to their winter quarters as soon as they have taken hold of the soil. For baskets, strong and healthy plants should be procured and planted by September 1st, so that the plants can become well established by the time they are wanted for the house.

The *Lophospermum* can be easily propagated from cuttings of the half-ripened wood. It stands dry weather remarkably well, and retains its foliage, from the bottom up, unaltered through the season. Grown outside, it is perfectly free from insects, but is somewhat troubled by the green-fly in the greenhouse. A

slight fumigation of tobacco will soon destroy them, however. As the *Lophospermum* dislikes to be severely pruned, the young shoots must be tied in their proper place, and, for this purpose, the plants must be looked over occasionally while growing.

L. scandens, with rosy-purple flowers, is the best variety, and is, when well grown, a fine trellis plant. *L. Hendersonii*, with its rosy-carmine flowers, is also a good variety.—C. E. P., *Queens, L. I.*

PLANTS FOR OBJECT LESSONS.

MR. VICK:—Will you allow me to harp a little more at your door on my favorite string—the especial convenience and usefulness of plants and their parts as occasional school object lessons? Teachers should make a point of seeing and reading your admirable MAGAZINE, not only so that they may be able to gain and impart reliable knowledge in regard to the growth and keeping of handsome plants, but especially for the sake of the lessons and illustrations with which the articles on “Botany for Little Folks” will supply them. Are their scholars dropping off, wearying of the tiresome millround of book tasks and lesson saying? Let them, now and then, substitute plant-leaves for book-leaves; throw away the terror-dealing rod, if such a thing is kept, and attract all back again with other rods—dozens of them—of surer effect than the divining-rods of the searchers for ore and water. Have the contrasts in color, thickness, stiffness, toughness, smoothness, brightness, &c., and all the curious differences of bark and bud, talked over, inspected, re-inspected, written about, and exchanged for others. There is no end to the interest, or the objects of interest, in this line, when eyes begin to be opened to observe, and thoughts to consider, and hearts to admire and venerate the maker and contriver of so many nice adjustments and such endless excellences.

I have just been shown the first of a series of articles on “One Phase of Teaching Botany,” by LEE B. HENDEE, in *The Primary Teacher*. It recommends to the teacher *Youman's First Book of Botany* as a base, aided by *Hooker's Child's Book of Nature*, Part I, and *Bartlett's Little Flower Lessons*, given in the second volume of *The Primary Teacher*, to which should be added VICK's MAGAZINE. Miss YOUMAN's lessons on the leaves, for summer, are advised, and then there are excellent suggestions for winter work and review: putting up the leaves gathered in the summer in cheap manilla herbariums, classifying them at first by margins; putting the entire ones, crenates, dentates, &c., together; then by the venation, and so on. Of

course, there must have been a good deal of gathering and drying done to supply the materials for this winter work and talk, but these furnish a good motive and good use for all the industry expended in gathering, and occasion a valuable re-examination and comparison of the whole, while the writing of the names and parts is good practice in the line of composition and tabular arrangement. This may be extended by the use of No. 3 of *Stickney's Child's Book of Language*.

Mr. BEECHER tells, in the *Christian Union*, how a child, whose pet name was Cuckoo, was taught the habit of close observation. For example: “Cuckoo, what do you see?” “I see a bush.” “How many stems are there coming up out of the ground? How many branches on one? How do the leaves set on them? What is the shape of the leaf? Show me the edges; and now the ribs. What difference, Cuckoo, can you see between that Apple tree and that Grape vine? Have they anything alike?” Cuckoo becomes an investigator on his own account, and implants the disposition in five or six later comers into this world of wonderful colors, and forms and fittings.—W. G. W., SR., *Tyrone, Pa.*

AUTUMN FROST IN CALIFORNIA.

MR. VICK:—I think you will not object to hearing a few words about the treatment our flower pets have received from that old cold-hearted fellow, Jack Frost. On the morning of November 18th, we found his presence in our garden for the first time this season. But this did not surprise us, as it was about the usual period for us to find him, for two or three mornings, mildly clasping our gay pets in his cold, blighting embrace. But to have him loiter around until he had added six more nights to the three, and each succeeding one a little more frigid, and his locks more hoary, till vessels of water were nearly skimmed over with ice, we could no longer complacently view the destructive scene, and felt justified in hurling ugly epithets at the old fellow. We plainly told him that this visit was the most savage one we had received in the month of November during the nine years of our record.

During the 27th and 28th of November, hazy clouds gathered in the horizon, and a southerly breeze hurriedly sent the depredator back to the snow-clad hills. A few days of slow, sympathizing rain did much to relieve the damage of the enemy; and now, upon a general survey, I find a bed of Pansies, with their bright faces looking me in the eyes expressively, saying, “Don't care; didn't hurt me much.” A bed of Sweet Violets (now beginning to bloom),

and a large bed of Carnations, Chrysanthemums, Verbenas, &c., show about the same indifference to the foe as did the Pansies. But Fuchsias, Salvias and Heliotropes, bedded in the open garden, have their stems trimmed with very dark foliage, mourning the departure of their former glory. A large border around the house, however, filled with this class and other tender plants, show no wounds from the enemy. A large bed of many varieties of Geraniums also show no black leaves, although some of them, in a drooping, mournful manner, distinctly express a dread of such a visit; yet many fine, lofty trusses defiantly unfurl their gay colors.

Callas, Caladiums and Bananas, in sheltered positions, preserve their dignity. The Calla, though quite sensitive, after freezing so hard for four or five times that the leaves droop to the ground, if in a shady place, will recuperate and stretch its stems four to five feet high and give an abundance of bloom.—A FRIEND OF PLANTS, *Sonoma, Cal.*

AN AMATEUR'S EXPERIENCE.

MR. VICK :—From you I have acquired and put in practice much valuable information concerning the cultivation of flowers. The seeds which I procured from you have succeeded well, a result due to the quality of the seeds and to the good methods of sowing, transplanting, etc., which I have learned from your publications. I did not take the trouble of counting the number of blossoms my Asters put forth last fall, nor of measuring their size, but the success was perfect, and so it was with regard to the Japanese Cockscombs. My beds of Asters and Cockscombs were objects of much admiration for all.

I would like now to obtain some information about propagating and planting Roses, especially Tea Roses. I succeed well in propagating a large number of plants by cuttings, such as Coleuses, Abutilon, Geraniums, Petunias, Pinks, etc., but not so well with Tea Roses, the only kind I have tried. I had a partial success this fall by means of a hot-bed, by filling the bottom with cow manure and the top with sand, and planting the cuttings in the sand, then shading and keeping the bed usually closed, except in the middle of the day opening the top for some hours. One day, which proved to be hot and sunny, the shading having been forgotten, the leaves fell off a certain number of the cuttings, and they failed. Was the sun really the cause of the failure? I never tried to make Rose cuttings in August. Do you think the success would then be more probable?

I made the same experiment as mentioned by one of your correspondents in the Christmas number, of planting Gladioli among Tea

Roses; moreover, I mixed also Tuberoses, and the effect was very good. There is one defect with Tea Roses, when they are alone in a bed: the blossoms are not always as plentiful as might be desired for the appearance of the bed. Gladioli, Tuberoses, and, I believe, some other plants—such as your beautiful Cockscombs—make up for this deficiency. I will probably try the combination of Cockscombs with Tea Roses next year.

Another experiment of mine, if it deserves the name, consists in planting Dahlias among Pæonies. I planted the Pæonies far apart; when they had done blooming, the Dahlias were planted, after preparing the bed and adding some light manure where the ground required it. Of course, during the summer the bed had no special attention, except the fine and promising green leaves and shoots; but early in the fall and until frost came I had a little forest of large diamonds, of all colors. Large-growing varieties may be planted in the middle of the bed, and pompons and dwarfs around the border. There is hardly need of adding that it is often useful to cut the Pæony leaves, if they interfere with the growth of the Dahlias.—S. G., *Pine Orchard, Md.*

If S. G. will continue experimenting in Rose-growing he will succeed. The manure in the bottom of the frame was of no particular advantage; a bed of clean sand would have been as well. The month of August is a good time to make the cuttings, if care is given to ventilation and shading; cuttings put in at this time will make roots so as to be fit for transplanting in November and taking into the house for the winter. If cuttings are made later in the season, they need to be watched closely for damp, and when there is danger of frost, should be thoroughly protected by mats. They can be kept in the frame all winter, and in the spring will be found to have roots. They can then be potted singly, and placed in heat, and will come along rapidly. See page 145 of last volume on this subject.

HOW SQUASHES MAY BE RAISED.

I had a very small garden spot, not half large enough for our summer vegetables. There was no room for Squashes, and how to provide for them was the question. There was a nice plot of greensward in the front yard, and I conceived the idea of trying the Squashes on that. I planted three hills, one of the Hubbard, one of the Turban, and one of Marrowfat. An old farmer, of large agricultural experience, saw what I had done, and said: "You cannot raise Squashes on greensward. The vines need a mellow soil, in which they can take root at certain joints, and at these roots the Squashes receive much of their nourishment. The vines cannot take root on greensward." I saw the difficulty to my success, as stated by the farmer, and resolved that in some way it must be removed. The seeds I planted came up finely,

the young plants grew rapidly, and soon they began to run. Now what was to be done? After the vines had made about two joints, I placed under them a sod reversed, under which was placed some fertilizing substance. So I continued, using the sods freely, and the vines grew surprisingly, covering nearly the entire plot. The Squashes grew large, ripened finely, and, as they lay thick on the ground, the three kinds exhibiting their own peculiarities, presented a most striking appearance, attracting the attention of passers-by. The result was, we had all the Squashes we needed, and I demonstrated that any one who has a little greensward, can raise all the Squashes needed for family use.—A., *Malden, Mass.*

SIAMESE-TWINS DAHLIA.

MR. VICK:—This year, a curious freak of nature was seen in the manse garden here. It was a yellow Dahlia, the principal stalk of which had two fully formed flowers on it, growing back to back, and so close to each other that but a small part of their calices could be seen. One was fully blown a few days before the other. It was examined with interest by the visitors to the manse, of whom there was a goodly number. None ever saw a thing of the kind before. Many of them are "great hands" at flower gardening.

I told you, some time ago, about loading several young friends with flower roots and seeds for their gardens in the spring. A supply of home-grown flowers rewarded their labors. Now, "chill November's surly blasts have made fields and forests bare," as my countryman, "Robbie" Burns, says. I have, therefore, new work for my young friends. I have brought from Montreal a few ornaments in artificial wood, to be used by the young men as patterns for carving for the approaching New Year's exhibition in the manse, and cotton of different colors for the young women to make into flags of different nations, "to adorn our festival" on that occasion.—T. F., *Metis, Quebec.*

THE NATIVE PLACES OF PLANTS.

MR. VICK:—One very material point in descriptions of plants is too often passed over, not only in botanical works, but in less scientific books and papers—the natural habitat. In your issue for November is an article, "Elm Timber," credited to Transactions of the Scottish Arboricultural Society, which gives valuable information about a favorite tree, but rendered useless to many by the omission to state that the Elm requires for its perfect growth a constant and full supply of water in the soil. The Elm, like many other favorite trees, is rarely

found in this country very far away from low, moist ground, or near streams of water. It would be of much service to your readers if your many and widely spread correspondents would give the habitat of each native plant they describe.—B. N. H., *Pottsville, Pa.*

NOTES FROM OREGON.

MR. VICK:—For an amateur I have had very good success with seeds and plants. We have one great advantage over the people of your State, our climate is more favorable. In addition to our garden flowers, we can walk over our meadows during the summer, and enjoy a rich profusion of *Agrostemmas*, yellow Dog Violets, American Cowslips, *Aquilegias*, *Humboldtii* Lilies, *Eschscholtzias*, and a host of other flowers that grow wild here in beautiful perfection.

My Double Red Tulips were a perfect blaze of beauty, and the admiration of every one. *Whitlavia* grew ever so much better than you said it would; but "Mrs. E. B." should let it alone—it is a flower to look at, not to handle. "MARIA" need not feel at all alarmed about the *Lobelia*, here it grows wild so abundantly as to be a pest; so, too, the Bachelor's Button. And there's that man in Illinois, who traveled one hundred miles to see Ferns! Let him come here, where the Fern is such a pest as to crowd out the grain in the fields, and he will get over his Fern craze.

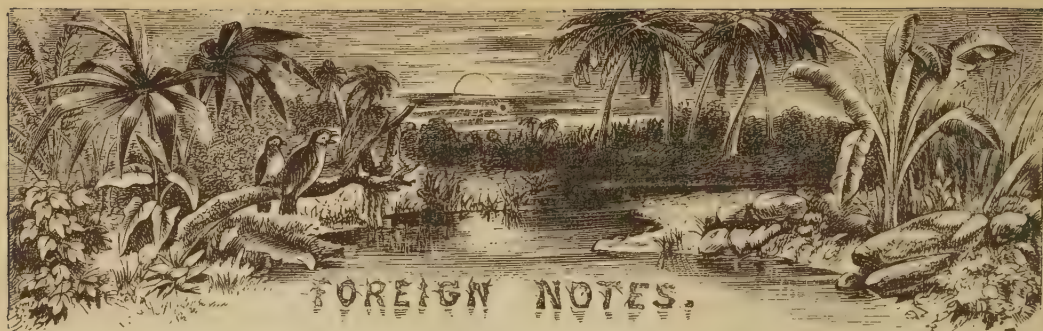
Your MAGAZINE is eagerly read when it comes, and is carefully preserved. And those colored plates, how beautiful! especially of Roses, and Pansies, and Fuchsias. The Fuchsias are my favorites; the very sight of them is enough to keep sin out of a man's mind.

What is the name of the enclosed Fern?—L. W. D., *Aumsville, Oregon.*

The species of Fern in question is *Aspidium filix-mas*. It is not a common species, although distributed over a large part of the continent at remote stations. It is found most plentifully above the parallel of 42° of latitude.

THE POTATO.

What can we do without the Potato? It has become almost indispensable in the vegetable supply for the table. The best varieties are earnestly sought for. The Early Rose has demanded the highest price in the market, for some years past in this section. Some value the Dunmore and the Vermont Early, but as far as our experience goes, the Early Ohio and the Burbank are the best. The first-named is earlier than the Early Rose, yields well and is excellent for the table. The Burbank is a choice variety, and will keep fresh and good till late in summer.—W., *Massachusetts.*



PRUNING TREES.

Any one passing through our city streets and avenues must have observed the unsightly appearance of some so-called shade trees, where the owners have shown their unscientific handiness by an indiscriminate lopping of branches, greatly to the detriment of the health of the tree, and totally destructive of its beauty.

Trees when first set out are mere saplings, but they should always be planted with due consideration as to the space they will cover when matured, as few shade or ornamental trees can be improved in beauty, or rendered more graceful, by pruning. Accidents, however, from wind storms and other causes, or too dense a growth, will necessitate the use of the saw or pruning knife. In such cases, let the work be done, if possible, before the branches have a diameter of two or three inches, and have begun to form red, or heart-wood. Still, with all due care and forethought, it will sometimes occur that branches of larger size must be removed, and the question



FIG. 1.

is, how to do this without injury to the tree.

Some excellent hints to this effect are given in a recent number of *The Garden*, an English paper, from which we take our illustrations and suggestions.

Figure 1 illustrates the best method of pruning, in the second year after the operation has been performed. A large branch has been sawn off close to the ring swell, or protuberance surrounding the base of the branch at its juncture with the body of the tree; the wound thus made having been well covered with grafting-clay, thus facilitating the process of healing by securing it against the effects of heat, air, and adverse weather. The consequence is, the wound is sound and free from cracks, and the healing well advanced.

Figure 2 represents a portion of another tree,

some sixty years old, and ten years after the pruning has been properly performed; perfect healing is the result, leaving only a slight crevice where the lips of the new bark meet, but the bark itself is healthy and well protects the wood beneath, which in turn has remained sound throughout.

That these suggestions are worthy our consideration, may be seen by the following illustrations, where the deleterious effects of heedless or unskilful pruning have produced their legitimate results.

Figure 3 represents a section of a tree some twelve years after bad pruning, and is a fine specimen of barbarous treatment, frequently to be found near the dwellings of civilization;



FIG. 2.

A is a branch recently cut off, nine or ten inches from the trunk; BBB, are the rotting stumps left after the first attempt at wood-butcherings, years ago; and they make splendid channels for communicating their own rottenness, with every rainstorm, to the very heart of the tree; CCC are knots, the remains of branches cut off about three inches from the trunk, and consequently are imperfectly healed over, being detrimental to a healthy growth.

Suppose, now, we follow up the life-history of one of these unfortunate branches. We may begin with one of large size, recently cut off, say about eight inches from the trunk, figure 4; at this distance branches almost inva-

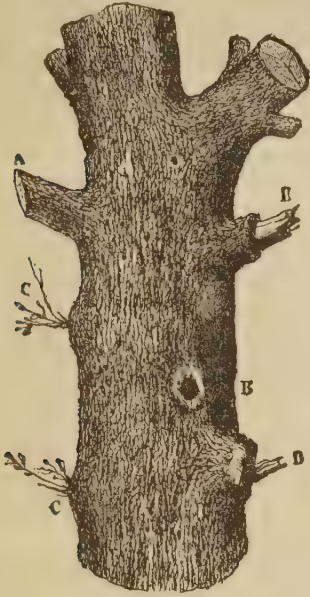


FIG. 3.

riably incline upwards, thus presenting the face of the wound to the sun and weather, and being left exposed, bad effects are produced before the new bark can possibly reach to and cover the surface; already splitting appears, which will soon convey moisture to the body of the tree, and rot will ensue.

Figure 5 shows the same stump, four years after; the bark has failed to reach or cover the wound at so great a distance from the main trunk, and has fallen back from it, thus exposing the stump to the effects of the weather and the ravages of insects.



FIG. 4.



FIG. 5.

Figure 6 represents the same stump two or three years later, when decomposition has made considerable progress, and ruin is inevitable.

Figure 7, eleven years after amputation, finds the same stump, or what is left of it, surrounded

with a deep cavity caused by constant rotting, and in which quantities of fetid water is re-



FIG. 6.



FIG. 7.

tained, producing incessant decay of the woody tissues, even to the very core of the tree.

Figure 8 is a section of an Oak, designed to show the bad effects of injudicious pruning, as it works into the body of the tree; BB shows the lips of the cicatrice, or new bark, in their failure to meet, because there is no sound wood upon which to fix themselves; CC, the decay consequent upon exposure and the incessant action of the elements.



FIG. 8.

From the foregoing facts and illustrations, we learn that if our trees really need pruning, it is worth while to do it wisely and well, and if we cannot give the time and attention requisite, then it will be decidedly better to leave them alone, unless, indeed, in case of accidental breakage from wind or storm, when the work *must* be attended to as promptly as to a broken arm.

FRUITFULNESS OF PLANTS.

A writer in an English journal states he has found that *Lilium auratum*, raised from seed, produces seed more freely than either imported or home-grown bulbs raised in the ordinary way from the bulb.

This is what might be expected, as innumerable facts testify. Twenty-five or thirty years ago, before attention was given to raising new varieties of Potatoes from seed, it was noticed that the old varieties produced very little seed, and, in fact, the amount of bloom was very small. As soon, however, as new varieties were produced from seed, these flowered and fruited profusely.

In our practice, we have tested, time and again, the difference in the amount of Verbena seed produced by seedling and cutting-plants,

with a result altogether in favor of seedling-plants.

It appears, when a plant is constantly increased by cuttings, buds, or layers, and there is no longer a demand upon it to produce seed for its propagation, that it gradually loses its fruitfulness. With the same treatment, this effect is noticed in some kinds of plants sooner than in others; but there is no doubt that all vegetation is subject to a uniform law in this respect.

BLUE-FLOWERED GREENHOUSE PLANTS.

An inquiry in a foreign journal for the best blue-flowering greenhouse plants has brought replies recommending several well-known plants that are not always sufficiently appreciated. One writer says of *Ageratum*, "We find them extremely useful, and the color is unattainable in any other plant during the winter months."

* * To obtain a stock, we sow in heat in the spring, and grow the young plants on for bedding-out purposes. Some are planted in a mixed border, and the best of these—selecting those of good habit, and which are likely to continue blooming some time—are lifted with a good ball, and potted into eight-inch pots. If liberal treatment is given, they will flower freely during the winter."

Another writer recommends the *Browallia*, and considers it the best and most useful blue flower that can be had at this season, affording choice sprays for bouquets, a use for which they are especially adapted, being small and of a character to add finish more telling and unique than could be attained by the employment of anything else. To have them good at this season of the year, the seed should be sown in August, and the plants grown in frames with plenty of air till the middle of October, when they require a warm situation. Three plants placed triangularly are grown together in a pot, in which they make a fine mass, and are more effective than when kept singly. The soil most suitable for them is a light, rich, open one, about half loam and half leaf-mold, with a little rotten manure; in this mixture they grow rapidly and maintain a healthy, green color.

THE LIFE-TIME OF FERNS.

A writer in the *Gardeners' Chronicle* gives an account of planting, in 1837, what might be called full-grown plants of Hart's-tongue Fern and *Osmunda regalis*, and removing the same plants in 1877. They are now in full vigor, and apparently not much larger than when first transplanted. His inference, from the condition of the plants and their rate of growth, is that there is no reason why they should not live 100 or 200 years, or even more.

AMERICAN PRESERVED FRUIT.

If Americans are at all "smart" they can do a wonderful business in supplying Europe both dried and canned fruits. The demand is unlimited. We have eaten canned Peaches in about every corner of Europe, but our dried fruits seem to be attracting general attention. A correspondent of the *London Garden* says: "I have just seen some dried Peaches (American) which are very good, and which suggest how much might be done in this way in countries where there is an over-supply of fruit. The drying process, which is now carried out to such perfection in America, is certainly much better than the 'canning' one as regards wholesomeness of the products, while it avoids the expense of cans and the carriage of much liquid matter, which is probably more liable to injury than the dried goods. The practice of drying fruit is carried on to a great extent in many parts of Germany and Switzerland for domestic use throughout the winter, but does not seem to be in use with us. The dried Apples now sent from America are excellent."

Some Americans do not realize the necessity of care in putting up fruit, and have not learned that putting the best at the top is poor policy, and not half as good as honesty. We know of one who every year sends a barrel of choice Northern Spy Apples to a friend in England. He selects the very largest and most highly colored, wraps each in tissue-paper, packs them in a barrel as solid as possible, the interstices being filled with chaff. On one occasion the receiver was offered \$25 for the barrel of fruit as soon as it was opened. American Apples were quoted in the Covent Garden market, London, January 3d, at \$4.50 to \$7.50 per barrel. This great difference being in the quality of the fruit and the care with which it was packed.

The trade of this country with Great Britain in canned goods is becoming of great proportions. A large part of these goods are from Baltimore, where millions of cans of Peaches and other fruit, Tomatoes, Corn, &c., are annually put up. Not only Great Britain, but other parts of Europe, India, Japan, and China are purchasers of this merchandise. A leading London dealer states the trade in canned goods is now ten times as great as it was four years ago, and this has been occasioned by the addition to the business of new articles of both fruit and vegetables. A single Broad street firm, in London, sold, last year, six hundred thousand sealed cans of Tomatoes alone, besides shiploads of Boston Baked Beans, Peas, Corn, &c., not counting the goods usually sealed in glass jars and bottles, under the head of catsups, sauces, and preserves.



PLEASANT GOSSIP.

CURIOUS KINDS OF WOODS.

MR. JAMES VICK:—Our boys procured in South America some pieces of stems of woody vines. They are curiosities to us, and as we do not know what plants they are from, we should like it if you could let us know, and at the same time give some explanation of their curious formation—A. M. B., *Canisteo, N. Y.*

As our readers well understand, our common trees and shrubs increase in diameter by the annual formation of a layer of wood next to the bark. In some trees, these annual layers, or rings, of wood are very clearly perceived, and, in others, less so. The accompanying illustration of a cross-section of an Oak tree exhibits this structure.

In the very center of every such tree, or stem, is a small portion called the pith; cylindric in form, it extends through the whole length of the stem. It is of different structure from what is called the woody tissue, and consists of large cells, filled with sap when first formed, but eventually becoming dry, light and empty. It corresponds in



CROSS-SECTION OF
OAK TREE.

structure to the bark, and is connected with it by a system of cells of the same kind extending out in every direction from the pith. This arrangement is indicated in the Oak cross-section by the white lines, in the engraving, radiating from the center to the circumference, or from the pith to the bark. The scientific name of the pith is *medulla*, and the rays are called medullary rays. The term rays, as applied in this case, is only expressive of the appearance of a cross-section of wood; for, as one can easily understand, the structure is really in the shape of thin sheets, or plates. These medullary plates exhibit the appearance termed "silver grain" in wood. The pith, the rays or plates and the bark, all, taken together, form what is called the medullary system. In many kinds of wood the medullary rays are so thin and fine as to be scarcely discernible, but in others they are more prominent.

The sections of wood sent to us, as referred to in the note above, exhibit the medullary sys-

tem in a remarkable manner. The engravings here presented, figures 1 and 2, very faithfully show the appearance of the cross-sections. In connection with the statements already given, our readers will be able to gain a clear understanding of the matter from the following extract from *Gray's Structural Botany*. "In many woody climbing or twining stems, such as those of *Clematis*, *Aristolochia Siphon* and *Menispermum Canadense*, the annual layers are rather obscurely marked, while the medullary rays are unusually broad; and the wood, therefore, forms

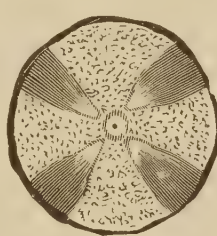


FIG. 1.

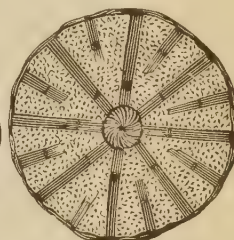


FIG. 2.

CROSS-SECTIONS OF TWO KINDS OF VINES.

a series of separable wedges disposed in a circle around the pith. In the stem of *Bignonia capreolata*, the annual rings, after the first four or five, are interrupted in four places, and here as many broad plates of cellular tissue, belonging properly to the bark, are interposed at right-angles to each other from the circumference towards the center, so that the transverse section of the stem nearly resembles a Maltese cross."

The section shown at figure 1 is undoubtedly either *Bignonia capreolata* or *Bignonia crucis*, which are similar to each other in this respect. As we could not identify satisfactorily the specimen of which the cross-section is represented at figure 2, it was referred to Dr. GRAY, at Cambridge, who informs us that it "is from one of the Bignoniaceæ—not unlikely from the genus *Anemopægma*." The rays, as shown in figure 2, are perfectly regular, and, as the wood becomes dry, the thin plates contract, and that part of each of them nearest the bark splits off the rest, and also separates from the woody tissue,

so as to be so many separate plates or tenons, movable in perfect-fitting grooves. In South America the wood of these vines is manufactured into various kinds of ornaments and articles of use.

SOME NATIVE FERNS.

MR. VICK :—The Fern enclosed I have met with in a wood near Jacksonville, and I thought it was *Onoclea sensibilis*; the sterile frond answers to it, but the fertile frond does not. In your MAGAZINE of August of last year, you say "the fertile frond looks like a stem of round berries, or seeds." There seems to be a mistake, or mine is not the same kind of Fern. Will you give its proper name?—W. F., Jacksonville, Fla.

With the above note we received a portion of each kind of frond of *Woodwardia angustifolia*. It is not strange that a person unacquainted with both *Woodwardia* and *Onoclea* should mistake the sterile fronds of one for those of the other; there is quite a resemblance, although the frond of *Onoclea* is broader in proportion to its length than that of *Woodwardia*.

The fertile fronds of these Ferns are, however, unmistakable. The representation of the fertile frond of *Onoclea* in our August number conveys a fair idea of its appearance, which is quite unlike what now appears in the annexed engraving of the fertile frond of *Woodwardia*. The fruit dots of the latter are about a quarter



WOODWARDIA ANGUSTIFOLIA.

of an inch in length, situated lengthwise in rows, on each side of the midrib of the narrow division, and appearing like the links of a chain; hence, the common name of this species is Chain Fern. Each fruit-dot is placed upon the inside of a vein running parallel to the midrib of the division, and has a cover-case, or indusium, attached by one of its sides to this vein, while the other, or side next the midrib, is free, and, at maturity, lifts up, allowing the escape of the spores.

While the divisions of the sterile fronds are, from smallest to largest, from a quarter to nearly three-quarters of an inch wide, those of the fertile fronds are contracted to a width of only

about an eighth of an inch; and the wing along the rachis or midrib of the frond is shrunk in some parts to a mere line, but broadens out to meet the base of each division.



WOODWARDIA VIRGINICA.

The segments or divisions of the sterile frond are wavy along their edges, and very finely serrate. The fertile frond has a stipe, or stem, considerably longer than the sterile frond.

There are three species of *Woodwardia* in this country, all of which are here illustrated.

W. Virginica is a Fern growing from two to three feet in height, and producing its fruit-dots in the manner shown in the engraving, not as in the previous species, on a contracted frond. Both are natives of bogs and low grounds. *W. Virginica* is found from Maine to Florida and Louisiana, while *W. angustifolia* is not known north of Massachusetts.

W. radicans, var. *Americana*, a native of California, is of a light green color and of a lustrous, silvery appearance, growing from two



WOODWARDIA RADICANS, VAR. AMERICANA.

to three feet high, and, like the Walking Fern, *Camptosorus*, having the peculiarity of propagating itself by rooting at the tip of the frond, when bent down so as to touch the ground. In cultivation, these Ferns require plenty of moisture.

A TRIO AND TREATMENT.

MR. VICK :—I send you with this mail, in a small box, a peculiar seed-pod from a vine recently introduced here. We have no name for it and desire you to give us one in the next number of your MAGAZINE. When quite ripe the pod is aromatic, It is a curiosity, I think.

Please, also, bestow a little praise or mention on the Yellow Oxalis. If proper soil is put in a tin can, holding even a pint, and one little bulb be set in it, the can may be hidden from view behind pots of other plants, but the bright, gay, yellow flowers are sure to come to the front; and their color is one usually needed in the greenhouse. I would not be without them.

Will you not also tell us if *Linum trigynum* loves sunshine or shade, dryness or moisture? I had one last year, but could not give it proper treatment, and, all from ignorance, lost it. It is so pretty, I am desirous of trying it again.—Mrs. C. P. B., Port Gibson, Miss.

The aforesaid seed-pod arrived in due time, and proved to be the fruit of a Cucumber vine, *Cucumis dipsaceus*, or Teasel Cucumber. It is of a long, oval or oblong shape, nearly three inches in length, and an inch and a half in diameter, but appearing considerably larger on account of the coarse, heavy hairs, thickly set



all over its surface and standing directly outwards. At first sight, one is reminded of the Fuller's Teasel, and this appearance has gained it its specific name. When cut open, it emits the smell of a fresh Cucumber from

the garden, but it is not edible; on the contrary, it is bitter and purgative. It is a very good, strong-growing, summer climber, easily raised from seed. The species was originally brought from Africa.

Oxalis lutea merits all the praise our friend gives it. It is very vigorous, and an abundant bloomer.

Linum trigynum is considered a plant of the easiest culture. A soil of equal parts of good loam and leaf mold, with a small addition of sand, will suit it admirably. It needs only a moderate amount of water, with greenhouse temperature in winter, and a full exposure to the sun. In summer it can be turned out into the open border.

WATER CRESS.

Seed sown early in spring, 1876; ground four feet by eight; north side of brick wall; came up thick, grew well; watered well in dry, hot weather; used early in the fall following; continued until August, 1879, thrifty and good; then it was neglected for watering, and partly died out. It was pronounced, when growing, by Englishmen used to it, as quite equal to that grown in water. I used it myself all the time, morning, noon and night, and say that it ought to be cultivated by all who like such stuff. I recommend to all persons wanting a good stomach, to try its cultivation.—E. B. H., Springfield, Ill.

BLOOMING OF PLANTS.

MR. VICK :—Please tell me why two fine Geranium seedlings, two years old, have never had a bud on them, while a slip from each has done nicely?

Will it keep my Oleander from blossoming to cut it back, while young, to make it bushy?—A. J. C., Silverton, Col.

Any treatment that checks the vigor of a plant has a tendency to increase its blooming. A plant propagated by a cutting or layer has not the vigor of the original or seedling plant. This is, no doubt, a correct statement of a general law relating to plants; but, in many cases, the decrease in vigor is inappreciable for long periods of time; in others, on the contrary, the effect is very prompt, as noticed in the Geraniums mentioned above. If the roots of the seedling plants are allowed to become pot-bound, doubtless they would soon commence to bloom.

If the young shoots of the Oleander are pinched off while tender, it will have the effect to hasten the blooming period. It is quite proper to take this course to give the plant a desired shape.

GERANIUMS.

Will Mr. VICK kindly give a list of the very best Double Geraniums for pot culture during the winter, to be used in a small window garden—only a little window, in a chamber heated by a wood fire, when a fire is requisite? The room is opened to allow fresh air to come in every day.

Is there a white Cactus that will bloom in winter? I have a pink Cactus now in bloom, called by some Lobster-claw Cactus; by others, Christmas Cactus. I would like a white one, if such exists.

The beautiful *Oxalis versicolor* is covered with flowers, and whoever wishes a little gem for a small window should get this laughing little beauty. The *Oxalis Bowii* also is very lovely. I am anxiously looking forward to the blooming of the *Iris pavonia*, which has begun to grow.—M., Oakley, S. C.

The best six varieties of winter-flowering, double Geraniums that we have had experience with are Asa Gray, Bishop Wood, Ernest Lauth, J. C. Rodbard, Madame Thibaut and President Leon Simon.

CLIMATE OF SOUTHERN CALIFORNIA.

The *Semi-Tropic California* says: "Winter in Southern California is a misnomer. We have no winter; our seasons are really only three, spring, summer and fall. The large majority of our trees are evergreen, but few trees shed their leaves; they being mostly fruit trees of the deciduous family, whilst flowers of all kinds bloom out of doors all the year round.

"Our rains come in the months from November to May, and then it is not as our Eastern friends imagine, a constant mizzle, drizzle; far from it—an occasional rain, and that generally in the night, with bright, sun-shiny days—a cloudy day is almost unknown during the year."

PLANTS—COLD PIT—HEDGE.

MR. JAMES VICK :—1. I enclose a leaf from a highly prized plant for a correct name. Is it the Holly-leaved Mahonia, or, as some call it, the Scotch Holly?

2. What is *Ardisia crenulata*? I do not find it in *Gray's Botany*, and I do not know where it belongs, botanically. It is a splendid house plant, in respect of its Camellia-like foliage and its rosy berries.

3. In my cold-pit I use, sometimes, one of the best oil stoves, from which there is a very little odor of the burning oil. Is this odor injurious to plants?

4. And specially, I have about 200 feet of fence to build about my dwelling lot. We are not so far civilized as to abandon enclosures. Stock, passing to and from railroad trains alone make it dangerous. Iron would take too much of my money; and, besides, I don't like the idea of iron in a fence. I propose to build a pretty wood fence, with light, horizontal, dressed rails, carved posts, and within it to plant a hedge. But I want a low hedge, to avoid the appearance of an exclusive wall; and, I take it, I must have enough of foliage to give good lung-power to plants. Three and a half feet is as



ARDISIA CRENULATA.

high as I would like to have the hedge-row. Of what plants had it better be made, so as to answer as sufficient protection when I may abandon my wooden fence?

I might say that with me, in my profession, I am obliged to have outside hobbies to ride, and I ride them hard, with the reservation of the privilege of getting off when I wish. The hobby which I now ride, with prospects of continuance, is the cultivation of plants and flowers, and your *MAGAZINE* affords me gratification in the greatest degree.—B. C., *Washington, Pa.*

1. The leaf received is that of *Mahonia aquifolia*, or, as it is popularly called, the American Holly, not the Scotch Holly. The Scotch is the same as the English Holly, or, in other words, it is the real Holly, which the Mahonia somewhat resembles in foliage, although a very different plant. The Mahonia is a Rocky Mountain plant, now considerably planted in ornamental grounds where it is known, but it is not as well known as its merits deserve. It is a plant of great value in this country where the Holly, *Ilex aquifolium*, will not thrive.

2. *Ardisia crenulata* is an elegant little plant in foliage and fruit, and belongs, botanically, to the family Myrsinaceæ, a small order very close to the Primrose family. It is not represented by any native plants of this region.

3. We think you will find no injurious result in the use of the oil-stove in the cold-pit.

4. The hedge that we would advise you to plant is the Japan Quince. It will prove to be both defensive and ornamental, and perfectly hardy. The foliage is very beautiful, as the leaves are thick, dark green, and have a glossy, shining surface. In the spring the plant is covered with large, crimson flowers, lasting two or three weeks. It will take from four to six years to get this hedge up three or four feet high, so that it will be an efficient protection from cattle. In the meantime, some sort of fence, as our correspondent suggests, will be necessary. Our experience with a wooden fence along the line of a hedge has taught us that it is impossible to raise a good hedge in such proximity to the fence, and therefore we should not entertain the idea of building one. The best thing to do, is to get some posts, as many as necessary, and to strain along them some wires; if the wire used is the barbed wire, made especially for this purpose, it will prove perfectly defensive and, at the same time, the hedge will be quite open to the light, and will develop itself without hindrance.

A LEARNER'S QUESTIONS.

MR. VICK :—Please tell me how to propagate *Centaureas* and *Lantanas*.

On removing our plants to the house, our Sensitive Plant drooped its leaves and has gradually shriveled and died. What is the cause?

I have heard people talk of pink and straw-colored Tuberoses. Were the flowers they speak of really Tuberoses? If not, what were they? Is the Tuberose bulb killed by a temperature below 50° F.? We have no bulbs to lose this season, or we would experiment for ourselves.

Another year, we expect to build a small conservatory off the parlor and dining-room. Will you please tell us the cheapest and best way to heat it.—E. F. L., *Columbus, O.*

Centaureas are very commonly multiplied by seed, which germinate readily. The white-foliaged and other ornamental-leaved varieties may be propagated by seed, or by cuttings or division of the roots.

Lantanas can be raised from the seed, but particular varieties are perpetuated by means of cuttings.

Cuttings of *Centaureas* and *Lantanas*, if placed in clear sand, root very easily with a slight bottom heat.

Your Sensitive Plant, *Mimosa pudica*, is an annual; its growth was nearly completed when you removed it, and at that stage it was not able to bear the rough treatment of transplanting.

We do not know of any pink Tuberoses; the buds usually have a pink tinge before opening. As for straw-colored ones, they are not uncommon, for any Tuberose flower, as it becomes old, changes from a clear white to a yellowish white or straw-color.

At what degree of temperature Tuberose bulbs may be kept in store depends upon circumstances. In a very dry atmosphere the temperature may be much lower than in a moist one. As a safe rule, we should advise 60°.

There are various methods of heating small conservatories. Much depends upon how they are situated; when off rooms that are always heated they may receive sufficient heat directly from the air of the room into which they open. If more heat than this is necessary, it may be supplied to some extent by the use of a kerosene oil-stove; or by small pipes filled with water passing from the furnace in the cellar to the conservatory and around it. A continual flow of hot water through the pipes affords the necessary heat to the air of the conservatory. When this method is not practicable, others may yet be adopted. In the last volume these methods were fully described and illustrated; hereafter we expect to furnish more information on this subject.

SEED OF THE WAX PLANT.

MR. VICK:—Enclosed I send you the seed from the old-fashioned, thick-leaved Wax Plant. I do not know its proper name. The seed of that plant is a novelty to me; I suppose it is not to you. The plant is about twenty-five years old, but I never knew it to bear seed before; it came in the shape of a bean, and, when it became ripe, it opened on one side, and the downy seed came out. The pod was about five inches long. The plant blooms almost constantly, summer and winter, with very little care. It has taken a premium at the county fair several times. I send the seed to you because we have had so many pretty flowers from your seeds that we have been getting of you for several years. —A. W., Norristown, Pa.

The long, slender pod was not more than a quarter of an inch in diameter, and the small, flat seeds had each a tuft of silk, like those of the Silk-weed, *Asclepias*; in fact, the seed and seed-pod of the Wax Plant bear a great resemblance to the Silk-weed, except that the seed-pod is long and slim, instead of having the plump form of the Silk-weed pod. The Hoya and *Asclepias* are members of the same natural family of plants, and have many points of likeness.

MY LILIES AND ROSES.

MR. VICK:—I wish you could have seen our Gold-banded Lily this summer. It sent up four stalks, each bearing from five to nine flowers, some of which were fourteen good big inches in diameter. The *roseum* and *album* were nicer than ever before; but something is wrong either with us or with the bulb of the *longiflorum*. We purchased three, and planted them the same as the others, but not one came up. Now, what was the matter? I think, from your description, it must be beautiful. Our Tulips are the admiration of the whole neighborhood.

I have a number of window plants, and have good success with everything I have tried, save Tea Roses; these invariably die on my hands. I purchase them

from a greenhouse near here, and follow their directions to the best of my ability. Perhaps I kill them with kindness.—MAY, Lindenwood, Ill.

There is no difficulty, ordinarily, about raising *Lilium Japonicum longiflorum*—in fact, it is of the easiest culture. What is the cause of MAY's failure we cannot say, but are sure it is an unusual one, and probably this will yet be discovered by MAY, herself, for success is certain if the trial be continued.

Healthy plants of Tea Roses, transplanted to the open ground in spring, after the frosts, will give perfect satisfaction.

METROSIDEROS—LILY OF THE VALLEY.

MR. VICK:—I wish to consult you about a *Metrosideros*. It was purchased one year ago. We kept it through the first winter very well. It grew nicely during the summer, being protected by a veranda, facing southeast. It has not bloomed. At the approach of cold weather it was removed to the bay window, and since that time it has a dried and withered appearance, and seems to be dying. Can it be saved? We bought a plant two or three years ago, which was then in bloom, but that dried up and died.

Our Lily of the Valley pips, purchased one year ago, bloomed beautifully, charming us with their sweetness. Are the pips worthless after blooming? Will you answer in your MAGAZINE and oblige?—MRS. L. S. E. W., Spartansburg, Pa

It is not improbable that the fatality attending *Metrosideros* in the hands of our enquirer is due to insects. Mealy-bug and Scale-insect both attack this plant, and if not closely watched might do irreparable damage before noticed.

Lily of the Valley pips, after forcing, are only suitable for planting out in the open ground, as it requires the strongest pips to force well. They are usually raised and selected especially for this purpose.

PARTRIDGE BERRY.

MR. VICK:—You will find enclosed three sprigs of a very pretty trailing vine which grows wild here in the woods. Two of the sprigs I send you have scarlet berries on them. It grows in such masses as to completely cover the ground and run out weeds. I think it would be nice to cover graves, for it is perfectly hardy. The sprig I send you was gathered from the open ground January 1st, 1880. I know it makes a nice hanging-basket vine, for I have tried it. It looks very beautiful, hanging over the sides of the basket, with its scarlet berries. The berries remain on the vines all winter. Will you please let me know its name?—C. E. C., Hereford, Md.

The specimens came safely to hand, and were very pretty pieces, stem, foliage and berries of *Mitchella repens*, or Partridge Berry, that grows commonly in open woods or groves in all parts of the country. It is easily obtainable, and is so well known, that it needs no description or introduction to our readers. It is often used, not only in the way described by C. E. C., but in small ferneries and jardinières to cover the ground.

A STOCK-POISONOUS PLANT.

The following communication, in reference to *Malvastrum coccineum*, a plant heretofore supposed to be harmless, will be found of interest to all stock-raisers at the west. The case referred to by our correspondent is that of Mr. RUBLE, of Pueblo, Colorado, and occurred last October. A question may, perhaps, be raised as to the identity of the injurious plant. If it is absolutely certain that this species of *Malvastrum* is poisonous to stock, some energetic means will be necessary to eradicate it, as, we understand, it is quite common:

MR. VICK:—I send you some specimens of the plant, *Malvastrum coccineum*. The remarkable thing about it is that, so far, this is the only species in the world belonging to this family, Mallow family, that has been found to be pois-



MALVASTRUM COCCINEUM.

onous. Heretofore, the family has been said to be a perfectly harmless class of plants, noted only for their mucilaginous juice and beautiful flowers. The Mallows, Hibiscus and Abutilons belong to this family, and are found in almost every garden.

The *Malvastrum coccineum* is common on plains, from Iowa to California, and Saskatchewan to Texas and Mexico. It blooms from May to July, is a low-spreading plant, easily recognized by its Mallow-like pink-red flowers and hoary, five-parted leaves. The pubescence (hairs) on the leaves is very remarkable. Under the microscope, each hair stands up from the surface of the leaf, like the trunk of a tree, then it branches out at right-angles into from six to ten beautiful rays, like a star-fish or star; hence, the pubescence is said to be stellate (star-like.) The surface of the leaf is densely covered with these beautiful stellate hairs, which can almost be discerned with the naked eye.

The plant has never been analysed by a competent chemist, but the fact that one sheepman lost 1,200 sheep in four hours by eating it (the sheep dying at once), should lead people to be careful about its use. No antidote is yet known for it. The discovery of this quality in this

plant should lead people to place little confidence in any statement that certain families of plants are harmless, such as the Mallow family. Pea family, Cress family, etc.; for, till recently, the Pea family also was supposed to be harmless, but now some of the most deadly stock poisons are to be found in this family; for example, the Loco of the plains, and a number of sheep-poisons in Nevada and California.—MARCUS E. JONES, *Grinnell, Ia.*

TREATMENT OF CALLA AND OLEANDER.

MR. VICK:—Seeing an inquiry in the January number of your elegant MAGAZINE with regard to the treatment of Calla Lily, it may not be amiss for me to give the method of managing mine. Last spring I purchased a fine-looking plant, just from the warmth and forcing treatment of the greenhouse, and, as might have been expected, in a short time, under entirely different conditions, it began to droop, and the leaves and stalks to turn yellow. I procured a three-gallon glazed crock, filled it two-thirds full of rich earth, as you recommend, and then put in the plant and filled nearly to the brim with water, which I have kept at about that level ever since, adding now and then a few drops of ammonia. To-day, my Calla stands four feet high, with four broad, dark green leaves; a stalk at the water-line is as large as my wrist, and two flower stems are appearing.

A few words about training the Oleander. I see you make some suggestions about remedying the common error of allowing them to grow without training, in the desire to procure flowers at the earliest possible moment. In starting from a cutting, my practice is to pinch off the shoots above the second or third joint, or more, if desired, and the reward for such practice is double, and sometimes treble, the number of shoots, which may again be pinched, thus producing a compact, bushy head. This is in itself an ornament; besides, the plant is vigorous and able to support a large number of clusters of flowers.—C. W. T., *Mantua Station, O.*

FLOWER CULTURE IN CALIFORNIA.

FRIEND VICK:—I well remember the first number of your GUIDE that came to Snelling. That little book was borrowed by a lady friend, and I did not see it again for months. Once, when many miles from home, I was looking over some books, and among them found the long-lost copy I had loaned. It had passed from family to family, and its leaves were worn thin; but my name was written on it in several places, so I could not fail to recognize it. I claimed it and took it home, and have it now.

When the people in this part of the country

began to lay out gardens, they met with very little success; the sun in summer was burning hot, and every one was afraid to use water. In time VICK became a household word, and his great floral enterprise was a topic of conversation in parlor, dining-room and street. I received several packages of seed, and as it became known, my friends and strangers came from a distance of twenty miles on every side, and asked if I would give them a few, just to see if they would grow in their ground. With my natural desire to share, I was left with none. The next spring I received another package, and O, how I worked over the dry, hard bed! I did not know that the little piece of ground I was cultivating should receive a barrel of water every day. I was sure too much water would drown the seeds, and so I used a sprinkling can, and toiled away and watched my beds, but there was no sign of a leaf. Thus for many years I toiled and looked at the beautiful engravings, but was never rewarded with any flowers. At last, we Snellingites moved over to Merced City, and began anew. I found here that many who had windmills by which they received a supply of water, were meeting with success; but I believed in rain, since we had no windmill. The perennials obtained from our home nursery thrived very well, with bucket watering, but the seeds would not come. One day, two years ago, I took several papers of fancy grasses and sowed them broad-cast, and also a paper of Sweet Peas, but nothing came up that year.

Last spring we managed to get a good windmill, and one day, in looking over some garden seeds, I found a paper of Zinnia seed that I had received several years previously. I had a rich bed and planted the seeds in it, and in a few weeks I had the pleasure of seeing the little plants. The ground was soft and damp, and I transplanted them, at proper distances, until I had a bed of twenty plants. O, how I enjoyed my garden! Everywhere among the green foliage could be seen the beautiful, gay colors peeping out. I made idols of those bright peepers.—X. Y. Z.

TREE FERNS IN CALIFORNIA.

An immense variety of plants and trees from all parts of the country will, no doubt, find a new home by cultivation in California. In another quarter of a century, some of the rural homes of that country may present sights the eye will delight to rest upon, with their rich assemblages of the beautiful, the graceful and the majestic vegetation of the world. Just now they propose to test Tree Ferns in the open ground. The *California Agriculturist* says:

‘We have all, probably, seen, at one time or another, the Tree Ferns growing luxuriantly in a greenhouse or conservatory, but no one has yet tried them in the garden. A gentleman in Scotland has planted a number, and they have survived the winters there. He planted *Dicksonia antarctica*, common in Tasmania, South Australia, and New Zealand. It is called by the Maoris ‘Wekiponga;’ *Dicksonia squarrosa*, of New Zealand, native name ‘Weki;’ also, *Cyathea dealbata*, the noble Silver Tree Fern or ‘Ponga’ of the Maoris; also, the *Cyathea medullaris*, or Black Tree Fern, and the ‘Korau’ of the natives. All of these endured the Scottish winter, the Dicksonias, in particular, appearing to thrive. Now let us try the Tree Ferns, giving them a moist location.’

HEPATICA TRILOBA.

MR. VICK:—*Hepatica*, or Liverwort, is found about the middle of May in this region, along the hillsides of the lakes, and wherever the ground is dry. *Hepatica triloba*, of several shades of colors, abounds here. The blossoms of the white variety are the largest, measuring about an inch in diameter. The next in size is that with a purple shade. Rose color and delicate pink are also found, but neither so frequently nor so large. A double white specimen was found near here about two years since, which had nearly one hundred petals. It was photographed at the time, but I have not the picture.

Hepatica acutiloba is another variety sometimes seen here, and is said to be but a sport of the more common form. The leaves of both are radical, proceeding directly from the root, of a deep, rich green, heart-shaped and three-lobed; thickish, persistent through the winter, the new leaves appearing after the bloom is over in the spring. There are usually four or five flowers on each stem.

“Ye field flowers! the gardens eclipse you, ’tis true;
Yet, wildlings of nature, I dote upon you.”

—MISS A. B. S., *Canandaigua, N. Y.*

BIGNONIA RADICANS.

MR. VICK:—I think H. O’H., of Chatham, Ont., must be mistaken in his information about the *Bignonia radicans* not being hardy in the neighborhood of Detroit, as I lived thirty miles north and west of Detroit until last December, when we came here, and I had a very thrifty vine out there. I am now two hundred miles north and west of Detroit, and I never saw a thriftier vine than there is out here, nor one more fully loaded with blossoms and seed-pods. —MRS. N. L. S., *Morley, Mich.*

ANNUALS IN MY GARDEN.

I must tell you a word about the flower seeds I sowed last summer. It seems as if every one of them grew. I tried a few new kinds; *Ageratum* was one of them, and the plants blossomed until frost came. Some time in August I cut off all the old buds, and then new ones started up. I think the last flowers were nicer than the first. I tried *Asperula*, and they were beautiful, and were the first I had ever seen: *Browallia* was another kind new to me. They were excellent for late flowers. *Phlox Drummondii grandiflora* were lovely; I have always had the common sort before.

I must say a word about my *Verbenas*. I bought two papers of seed, red and white. The flowers were very fragrant, and I think I picked as much as a bushel of the beautiful clusters. *Vinca* was another new kind I tried, and I had a whole bed of them, the first I had ever seen growing out of doors in Buffalo. I had seen them in greenhouses here. They are lovely for bouquets. I made over fifty bouquets out of our small garden, besides all the loose flowers we picked. I would like to know which are the finer *Balsams*, the French or the German. I sowed the French seed last season, and raised my own plants in a hot-bed.—M. W., Buffalo, N. Y.

THE BROWALLIA.

MR. JAMES VICK:—I wish to tell you about the beautiful bed of *Browallia* I raised from a package of seeds. They were planted in the open ground, at the foot of a Tree-rose, the 3d day of May last. They came up very sparsely and were attacked at once by insects, but *hellibore* was applied frequently and the poor plants came off conquerors at last, attaining the height of five feet by the last of August, and from that time until the 25th of October they formed a perfect mass of lovely sky-blue flowers, which attracted much attention from passers-by. Every one said they had never seen such flowers before. The beautiful *Browallia* reminded me of BRYANT'S description of the Fringed Gentian:

"Blue, blue as if the sky let fall
A flower from its cerulean wall."

—D. A. N.

THE MARZAJOLA ONION FOR TEXAS.—D. ELDREDGE, of South Gabrell, Texas, writes us: "The Marzajola Onion is the Onion for warm climates. I have tried all of them, and find the Marzajola to grow well; and what gives them the preference here over all others, is the fact that they are the best keepers—the only kind that will keep during the warm weather."

THE GARDEN IN VIRGINIA.

MR. VICK:—I want to tell you of a Tomato vine I had last season. It was not an early plant, but one that came up from seed sown in the open ground. I planted it by the south wall of my house, and trained it on the wall with strips of leather and tacks. It covered a space ten by twelve feet, and was full of fruit that ripened splendidly. I pulled fruit off the vine three weeks after ripening, in perfect order, and delicious in taste. The variety was Hathaway. It was still growing vigorously and was full of ripe and green fruit when the frost came.

I had two fine Madeira Vines last summer, from tubers left out last winter and covered with straw, and a board to keep it from blowing off. I also had quite a number of *Verbena* plants from self-sown seed—my plants of the previous year were from self-sown seed, also. I had white, crimson, and several varieties of striped, that bloomed profusely, both last year and this.

I often think of things I would like to ask you about, but I am sure to find in the next number of the MAGAZINE an answer to my question, which has been asked by some one else.—MRS. ANNIE BASYE, Lottsburg, Va.

A WORLD'S FAIR.

Another World's Fair is probable in 1883 at New York. A committee have been developing the project, and state that many manufacturers and others express themselves desirous of preparing exhibits for the projected New York Fair. Various large concerns interested in the cotton industries, others in the different lines of manufacturing hardware, the iron and coal trades—all are willing to encourage the undertaking. An extensive foreign correspondence with the principal countries of the world, has elicited the information that there is a general willingness to co-operate with the projectors of the enterprise. We shall soon hear, no doubt, of this enterprise taking definite shape.

COLD WEATHER.

Mr. HICKS, of Alexandria, Missouri, wrote to us in January: "I received my oil stove just as the cold spell came on, and all the mercury thermometers were frozen up, and the spirit instruments marked for two nights more than 46° below zero. I filled my stoves with wood, and then lit my kerosene stove, before retiring, and in the morning my plants were all right." The evidence of the value, cheapness, and efficiency of oil stoves is constantly accumulating. Their success is achieved.



OUR YOUNG PEOPLE.

BOTANY FOR LITTLE FOLKS.

Some families of plants are very marked, and stand out conspicuously in the vegetable kingdom, so clearly defined that any one at all informed in relation to them would seldom mistake the identity of any of their members. Such, for instance, are the Mustard family, the Mallow family, the Pea or Pulse family, the Rose family, the Cactus family, the Composite family, and others that readily suggest themselves.

We shall now notice some of the principal characteristics of a very distinct order, the Mint family, or *Labiatae*. This word, *labiate*, or labiate plants, refers to the mouth of the flower, or, having two lips; the Latin word, *labia*, meaning a lip. The flower of *Salvia bicolor*, here shown, figure 1, conveys a correct

idea of the general or typical form of the flowers of the Mint family. The calyx is in one piece, but showing five long points, indicating in its origin five parts that have become united at their edges along their lower parts, while the upper parts are still free.



Fig. 1. Flower of *Salvia bicolor*.

As we have heretofore explained, such a calyx is monosepalous, consisting of one sepal, or, more properly, gamosepalous, meaning united sepals. The corolla, in like manner, is united into one piece, and is called monopetalous, or gamopetalous. The union of the petals forms a tube for the lower part of this flower, but at a certain point there is a separation into two parts, called the upper and lower lip. The upper lip of the flower is highly arched, and directly under it and following its curve, rise the stamens and pistil. At the middle of the front line of the upper lip is a notch showing

where the two petals that form this part are united. The lower portion, or under lip, being composed of three united petals, has three divisions or lobes. The calyx, as well as the corolla, is two-lipped, three united sepals forming the upper lip, and two, the lower.

Most plants in this family have four stamens, but the Sage, *Salvia*, like the Rosemary, has only two, the other two being suppressed.

The ovary, shown at figure 3, is four-lobed or celled, and the pistil rises at the base, between these lobes.

The diagram, figure 4, exhibits very clearly the arrangement of all the parts of the flower in the bud. The upper arc, representing the three sepals which are least divided, is merely notched, while the deeply-divided lower part is

indicated by two separate lines, or arcs. The upper lip of the corolla is shown by the dark line with a notch or division in the middle, and the lower



Fig. 2. Calyx and Pistil.



Fig. 3. Ovary on its base.

lip by the three dark lines below it, all being connected by light lines to mark the union of the parts. The places of the suppressed stamens are indicated by the two upper dots, and those of the developed ones by the corresponding larger figures immediately below them. In the center is an outline of the four-lobed ovary.

One of the stamens is shown by figure 5, and is of such peculiar form as to demand an explanation. To make the subject quite clear, we introduce illustrations of the stamens of several kinds of plants. Figure 6 is that of the Wall-flower, showing the anther composed of two

lobes situated upon the extremity of the filament, which is contracted to a very thin stem, serving to connect the lobes. This part that appears to be an extension of the filament, because it serves in the capacity of connecting the anther-lobes, is called the connective.



Fig. 4. Diagram of Flower.



Fig. 5. Stamens and Connective.

Figure 7 shows the form of the stamens of the *Hepatica*, and we notice that the connective, in this case, instead of being contracted, is broadened out, separating the anthers considerably. Figure 8 represents a stamen of the Lime, *Citrus Limetta*, which has its connective of two branches, thus separating the anther lobes still more widely. Looking now at figure 5, we perceive that the connective is very long, in the form of a bow, and that one lobe



Fig. 8.



Fig. 7.



Fig. 6.

of the anther is borne on its upper extremity, while the other, which is abortive, and has a somewhat petal-like appearance, is at the lower extremity, near the base of the flower; the connective is supported by the filament which joins it a short distance above its lower extremity.



Fig. 9. Stamen of Rosemary.

This is a very unusual form of stamen. The Rosemary has a very similar stamen, as seen at figure 9; in this case there is not even a rudiment of the second anther lobe, and only a small projection indicates its place. What has become of the other anther, and why is one only a rudiment in the *Salvia*? Numerous instances of suppressed and rudimentary organs, both in plants and animals, indicate

with the greatest certainty that these organs once existed in perfection, but, from some

Fig. 11. *Salvia Splendens*.

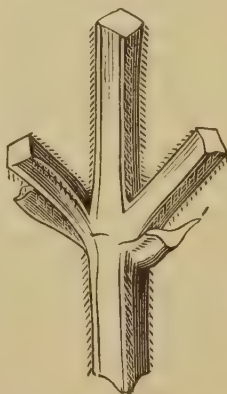
cause, they became useless or unnecessary, and then gradually ceased to be formed; they are thus found in all stages of suppression. It is believed, by some naturalists, at least, that the horse is descended from progenitors that had five toes to each foot; that one by one these toes have been suppressed excepting one to each foot, upon the ends of which he now walks.

In many cases the reasons for these deviations in structure are apparent, but in most they are undiscernible, being enveloped in the dense mist of the complex changes of ages.

Fig. 12. *Perilla Nankinensis*.

One very apparent feature of the plants of the Mint family is the square stem, as shown by figure 10, and is so peculiar that it cannot fail to attract attention of even an indifferent observer.

Labiata plants are, with very few exceptions, herbs, having opposite leaves, and frequently the flowers are in whorls in their axils, sometimes in whorled cymes, and sometimes in spikes.

Fig. 10. Stem and branches of *Salvia*.

Most of these plants have a number of little glands, situated just below the surfaces of the leaves, which secrete a volatile oil, and on which account they are employed as condiments and stimulants, and variously used in cookery, medicine, perfumery, &c. A few species and their varieties are cultivated for the beauty of

their flowers and the elegance of their foliage. Among these are the *Salvia*, as already noticed, with blue and white flowers. One of the finest of the *Salvias* for its flowers is *S. splendens*. It is very popular as a greenhouse plant, and is also much planted in the open border where, late in the season, it makes a beautiful display; while, in this state, the plant may, with proper care, be lifted and potted, and kept along in blooming condition after taking into the house. *S. Ræmeriana* and *S. coccinea splendens* are other handsome, scarlet kinds. *S. patens* is a



Fig. 13. Thyme.

blue of a most lovely shade, and is a free-growing and abundant-blooming sort. *S. patens alba* is a white variety of the foregoing species, and similar to it in habit; both bloom the latter part of July and continue through the season. *S. Hoveyi* has a large, purple flower, and *S. rosea* a small, bright-pink or rose-colored flower. *S. officinalis tricolor* is a variety of the common Sage, with variegated leaves.

Thus it will be seen that there is much variation in color and size of the flowers in the different kinds. As a flowering plant, the *Salvia* is decidedly popular and useful, as may well be believed when it is known that there are several hundred species and varieties in cultivation for this purpose.

S. officinalis is a favorite garden herb, and used for stuffings and sauces, and frequently for tea, which is not a disagreeable beverage after one has become accustomed to it. The best variety of the garden Sage is known as the broad-leaved green.

As may be noticed by the illustration of the *S. splendens*, there is considerable variation in the forms of the flowers of the different species of *Salvia* as well as in their sizes. These remarks also apply to the flowers of all the members of the Mint family, although a gamopetalous corolla with two lips more or less distinctly developed is a constant and determinate feature. The young student must not be surprised to find peculiar forms that he had not anticipated.

Rosemary, *Rosmarinus officinalis*, is a labiate



Fig. 14. Rosemary.

plant highly prized by our German friends, who consider it almost a necessity of a garden. It is not used in cookery, but the sprigs are sometimes employed as a garnish. A decoction of its leaves is used in domestic medicine, and has the reputation of relieving headaches, and of promoting the growth of the hair and of curing baldness. It is used in the manufacture of Hungary water, Eau-de-Cologne, and other perfumery.

Thyme, *Thymus vulgaris*, is another of the Mint family that is a favorite in soups, stuffings, and sauces. It makes a very pretty edging-plant for two or three years, or while it keeps in good condition.



Fig. 15. Sweet Marjoram.

that have been long in cultivation, and are considered indispensable in every good garden.

Sweet Basil, *Ocimum Basilicum*, is an annual plant cultivated for its aromatic leaves, which are used in soups, stews and sauces, and sometimes in salads.

Spearmint, *Mentha viridis*, is largely used as a condiment, Mint sauce is considered quite as necessary an accompaniment to a joint of lamb or mutton as Sage-stuffing to a goose. Peppermint, *M. piperita*, is largely cultivated in some places, notably Wayne county, in this State, and some places in Michigan, where hundreds of acres are devoted to it. The oil



Fig. 16. Summer Savory.

is distilled from the leaves, and is used largely in confectionery, and to some extent in medical preparations. Both of these Mints are of European origin, and, in common practice, are propagated by division of the roots. They are so universally known, and are so characteristic of the family, as to have fixed upon it their name.

Besides the above, there might be mentioned Balm, or Bee Balm, *Melissa officinalis*, used

for Balm tea; Lavender, *Lavandula Spica*, the flowers of which are placed in wardrobes for scenting clothes, and for distilling to make Lavender water; Hyssop, *Hyssopus officinalis*, sometimes employed medicinally; Catnip, *Nepeta cataria*; Horehound, *Marrubium vulgare*, and many others.

Besides *Salvia*, there are several other genera of this family that supply ornamental plants. Among them are *Dracocephalum*, *Physostegia*, *Stachys*, *Perilla*, *Coleus*, &c. *Perilla Nankinensis* is an annual highly prized for its beautiful foliage, of a purplish, mulberry color. The plant grows about eighteen inches high, and is very effectively employed in ribbon-bedding. For this purpose, also, the *Coleus* is used, and perhaps no other plant to a greater extent within the last few years. By hybridization and cross-fertilizing it is found that the foliage is very



Fig. 17. Coleus.



Fig. 18. Sweet Basil.

susceptible to change, taking bright colors of yellow, crimson, scarlet, maroon, &c., in exquisite markings that, as varieties, are transmitted by cuttings. Our readers will perceive that the plants of this natural order will frequently present themselves to their notice, and a careful examination from time to time will render them quite familiar with their characteristic features. The labiate plants are prominent among those, the fertilization of which, modern naturalists consider, is in great measure due to the agency of insects; as such, they are called insect-loving plants, or entomophilous plants, from the two Greek words, *entomon*, an insect, and *philos*, a friend or lover. The lower lip of a two-lipped flower has been likened to a doorstep, as if it were turned out, so as to afford the greatest convenience for an insect to alight, when he makes his visit in search of honey or pollen; and it certainly appears to be a very pleasant and practical arrangement for this purpose. The Figworts, as seen in our last number, have the same two-lipped form of flower, and it is common to quite a number of orders, but the most conspicuous of these are the Orchids. Flowers that are thought to be fertilized by the grains of pollen carried by the wind

are called wind-loving flowers, or anemophilous, from the words *anemos*, the wind, and *philos*. Very much has been observed and written upon this subject; still, it is one yet in its infancy, and offers a wide field for careful observation.

THE CADDIS FLY.

The book of nature is full of wonders, and during the summer months the woods, meadows and streams are teeming with insect life, where not a day need pass without our observing some phase of that life, at once interesting and profitable.

Among the family of lace-winged flies, we have creatures of some importance to us indirectly, as they afford abundant food for trout and other fish. In the larva state they live in the water, and are then called Caddis-worms; in the perfect state they are winged insects, and in both conditions are eagerly devoured by trout. While in the larva state, they live in a very curious house, which they construct for themselves of little bits of sticks, shells, or other materials, selected according to the force of the stream in which they reside.

A Miss E. M. SMEE writes an interesting article on the Caddis-worm and its houses, in which she relates her experience with these wonderful little house-builders. The lady in



CASES OF THE CADDIS-WORM.

question was so much interested in watching them in their strange homes, as they moved along the bottom of the little streams, that a number were procured for more exact observation. The Caddis-worms were turned out of their dwellings, and each was placed in a separate glass of water, with various materials suitable for the construction of their houses, when the nude creatures immediately set to work to make new houses for self-protection, and never stopped till the greater part of the body was securely encased.

By giving to each worm one kind of material only, they were unable to exercise any choice, and this obliged each individual to make a house of such material as was given it; thus a great variety of houses were secured. Beauti-

ful cases were made of fragments of colored glass, amethyst, rock crystal, carnelian, agate, coral, marble, small shells, and pieces of pearl. When the little creatures were supplied with brass shavings, or gold and silver leaf, they were sorely puzzled, and with the latter they could only make an irregular case; with fragments of a tortoise-shell comb, one formed a case like a hedgehog. They were unable to make cases at all of round beads; neither could they succeed with slate, coal, brick, lead, or copper, and if supplied with chips of resinous wood the creatures were always destroyed.

The winged insects fly over the water to settle upon it; hence the allusion in Thompson's "Seasons:"

"To sunny waters some
By fatal instinct fly; where on the pool
They sportive wheel; or, sailing down the stream,
Are snatch'd immediate by the quick-eyed trout."

The Caddis-worm may be found at the bottom of clear, shallow streams during the early summer months, and make very interesting objects for an aquarium.

THE RHINE AND THE HUDSON.

From *Rhine Roamings*, a pleasant recital of conversations and descriptions of scenery, customs, &c., in Germany, by a young American lady, we make a few extracts, to show how some parts of the old country appear to one who has heretofore only known the new. The parties engaged in the following conversations are a few young ladies, or, rather, girls in their "teens," at the boarding school of the Frau von Heine, somewhere on the right bank of the Rhine; Frau von Heine, and the German pastor, Boehm. The American of this party is May Stevens. May had expressed her preference of the Hudson to the Rhine, when, therefore, Frau von Heine announced that Saturday was a regular excursion day, and that it had been arranged for them to leave for Cologne at 5 P. M., Friday, and the next morning leave there on the first boat up the river, Gretchen, one of the party, exclaimed triumphantly, "Now, you will see, May, which it will be, the Rhine or the Hudson!" Omitting the trip to Cologne, where they met Pastor Boehm, we find them, in the morning, on board the boat.

"After we had breakfasted, we looked about us, and all but May found something to admire. She, however, was silent; and Frau von Heine remarked to her, 'You do not seem to realize that you are on the Rhine!'

"The reply, made earnestly, was, 'Is it possible! If this is what you call the beautiful Rhine, what would you not say of our Hudson.'

"We were none of us prepared for this heart-

felt expression; and while most of us looked inquiringly at May, Pastor Boehm regarded her with delight. We could see that he thought the same, but dared not say it.

"Frau von Heine made no reply. Indeed, no one attempted to speak, until May continued, 'I had pictured to myself something very different, something grand and noble.'

"'If immensity is your ideal of beauty,' remarked some one, 'the cathedral must certainly satisfy you.'

"'That is but one structure, and so out of proportion to everything in its vicinity that it makes the neighborhood look all the more inferior.' Looking at the repairs which were being made on it, she continued, 'Tis a wooden monument, decaying before it is really finished. There is nothing here, in my opinion, to compare with the New York harbor; and this is the largest city on the Rhine, is it not?'

"The pastor then told us that at New York the harbor was always crowded with ships from every nation, and that the Rhine boats were but playthings compared with the ocean steamers always seen at its wharves; that the excursion boats on the Hudson were finely built, and had always on board some musical instrument; that the banks of the river are dotted with elegant residences, and that, according to his taste, the palisades exceed in beauty any scenery on the Rhine.

"May then undertook to describe the palisades; but she painted them in such glowing colors, that our smiles and exclamations of incredulity disheartened her. When, however, the pastor confirmed all she had said, even Frau von Heine acknowledged that perhaps, after all, it was not prejudice that made May so enthusiastic over the Hudson.

WHAT A PLANT MAY TEACH.

Far away from any other land, in the midst of a great ocean, four thousand miles west of Cape Horn, is a small island called Kerguelen's Island. Here the common Polypody, *Polypodium vulgare*, one of the most widely distributed Ferns, is found. A number of the plants that are common to this country are also found there. It is thought impossible that their center of origin should be there, and quite improbable that they could have been carried there by any existing agency. When Dr. HOOKER, the celebrated English botanist, visited the island many years ago, and found this condition of things, the only satisfactory explanation of it he could suggest was, that there had once been a land connection of the island with this continent. The Challenger, that lately made a voyage of scientific observation around the world, touched

at this island, and the geographers connected with the expedition came to the same conclusion as Dr. HOOKER, although they reason from data quite different from his. The opinion of all these observers is, that a long, low line of land at one time stretched out from the American continent westward, at least as far as where Kerguelen's Island now is, and that it has gradually, by the action of the waters, been washed away.

A FLEET COURIER.

The early spring brings to light the lovely Snowdrop, with its drooping, modest, pure-white blossom. How much, when a child, we admired the pretty, tender-looking plant, and wondered how it could have ventured out above the frozen ground, and the storms, so long before the sisterhood of flowers!

" Flower in the crannied wall,
I pluck you out of the crannies:
Hold you here, root and all, in my hand,
Little flower. But If I could understand
What you are, root and all, and all in all,
I should know what God and man is."

THE AMERICAN ENTOMOLOGIST.

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Professor RILEY is so well and favorably known all over the country for his work, whether as State Entomologist of Missouri, Entomologist of the Department of Agriculture, or in his present capacity of Chief of the United States Entomological Commission, that his charge of the Magazine is a guarantee of its usefulness.

Mr. FULLER is likewise widely and favorably known as the author of those standard works, *Small Fruits*, *Grape Culture*, *Forest Tree Culturist*, etc., and as the present agricultural editor of the *New York Sun*.

The January number of this magazine has reached our table, and we find it eminently practical as well as reliable in its scientific character.

BINDING THE MAGAZINE.

We will bind the MAGAZINE for any subscriber for 50 cents, and return the book with the postage or express charges paid by us.

Our colored plates are so handsome that some are tempted to take them out for framing. We will send extra colored plates to any of our subscribers for FIVE CENTS each.

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The Bound Volumes of our MAGAZINE for 1878 and 1879 will be forwarded to all who desire for \$1.75 each, postage or expressage prepaid.

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Some of our friends have suggested that we offer premiums for obtaining subscribers. As a slight compensation to those who labor among their neighbors in getting up clubs, we propose to give one of our FLORAL CHROMOS, on paper, to every one who sends us a club of *Five Subscribers*; and for *Twelve Subscribers* one of our CHROMOS ON CLOTH AND STRETCHER, both sent postage free. To any person sending us *Twenty Subscribers* we will forward by express, expressage paid by us, one of our FLORAL CHROMOS NICELY FRAMED IN WALNUT AND GILT. All to be at club rates—\$1 each. Or, if preferred, the same value in Flower Seeds.

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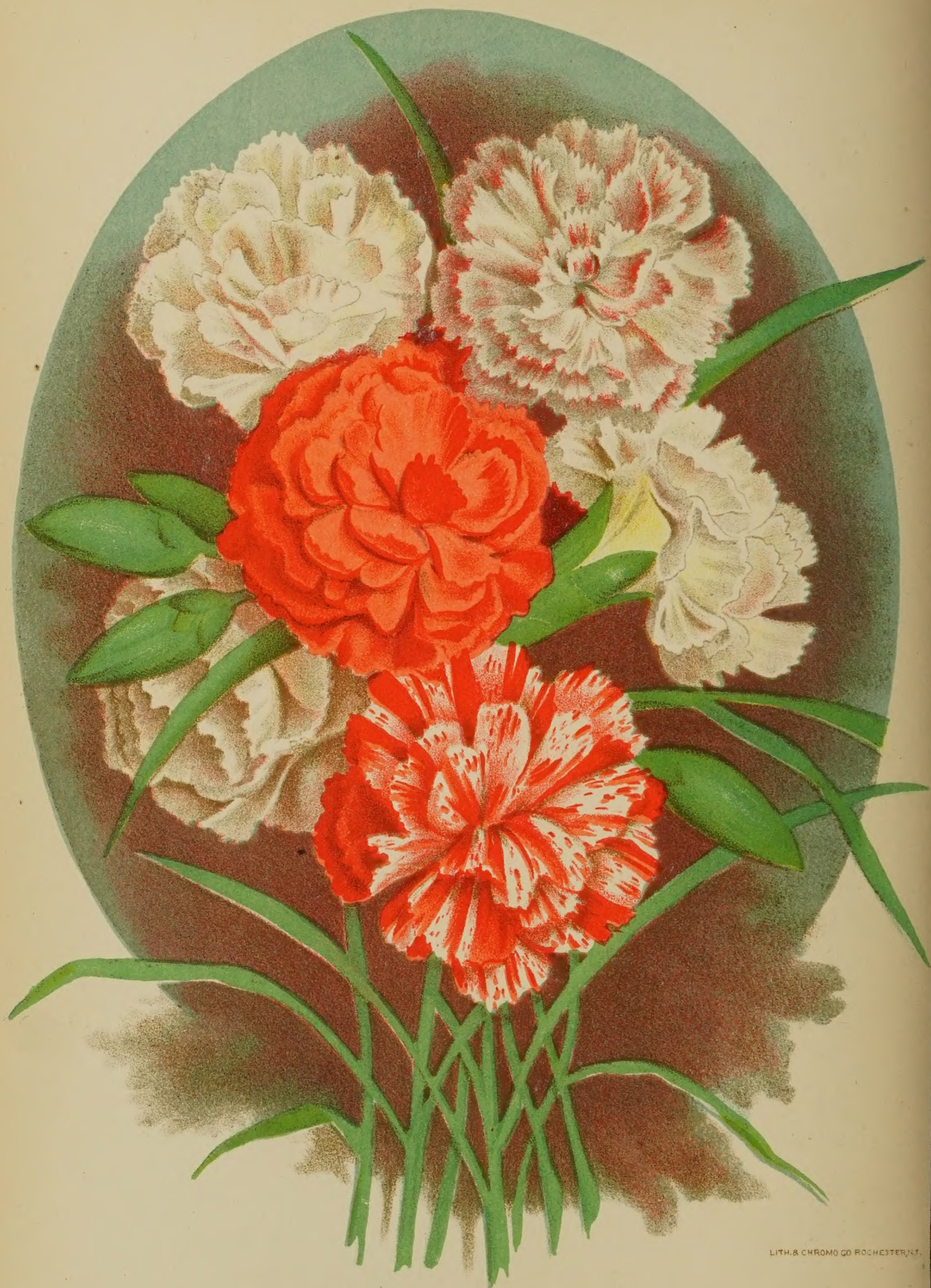
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